EXCAVATIONS AT CA-MER-130:

A LATE PREHISTORIC SITE IN PACHECO PASS

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CALIFORNIA ARCHEOLOGICAL REPORTS NO. 21-APRIL 1983

CONTENTS

PREFACE

It is with mixed feelings that some thirteen years after the preparation of the report on Mer-130, I was notified by Peter Schulz that the manuscript would be considered for publication. While my initial feeling was that archeological data of any sort were scarce for the west side of the San Joaquin Valley, it was also clear that the manuscript prepared by Louis A. "Sam" Payen and me was clearly, to me at least, uneven by current standards and lacked the final summarizing section, which for various reasons had never been completed. Though I have not, due to time constraints, discussed the report with Payen, I am sure that we both share this hesitancy, but realize that the material should be made available to the profession and the public.

I would after all this time like to acknowledge contributions to the project. Sam Payen, my co-author, did his usual professional job on the maps and illustrations, and in addition participated in a number of sessions with others interested in west side prehistory, Bill Pritchard and Fritz Riddell in particular. The field crew, as in all the work carried out in the mid-1960s in the area, performed with competency under trying conditions. To them, Mike McEachern, Bruce Steidl, Rod McNeil, Rich Banks, and J. Mills, I can only express my appreciation.

It is still my hope that at some point in the future we will be able to complete the program envisioned some twenty-plus years ago for the west-side area by Fritz Riddell, Sam Payen, Bill Pritchard, and myself. Much remains to be accomplished, even should another trowel never be put in this ground.

W. H. Olsen
April 1982

INTRODUCTION

The excavation of CA-Mer-130 marked the final phase of field work in the San Luis Reservoir area under the salvage program implemented by the Department of Parks and Recreation for the Department of Water Resources and the U.S. Bureau of Reclamation. It is anticipated that further work in this still relatively little known area will be performed as part of the interpretive program by the Department of Parks and Recreation, since the San Luis facility is now a unit of the State Park System.

The excavation of Mer-130 was an interesting contrast to past field work in the region. First, the site is located within the uplands, rather than on or near the alluvial fans of the valley proper. Secondly, it is situated within the oak woodland zone adjacent to a small ravine containing a permanent or nearly permanent spring. The physical surroundings, then, suggested that this site represented a different adaptation than that previously investigated in our excavation program.

It was hoped that the excavation of this small upland site would expand our knowledge of occupation patterns along the western edge of the San Joaquin Valley. More importantly, work here marked an introduction to problems of tribal identification based on archeological data in an area previously simply classed as Northern Valley Yokuts (Kroeber 1925).

Our immediate concern with Mer-130 was twofold: 1) were the foothill sites related to the Valley Yokuts sites, and 2) if they were indeed related, what was the specific nature of their function in the aboriginal system during the protohistoric period. These two questions, we realize, may appear simple, but they are basic in any research plan for the westside region. We addressed the site at the protohistoric or Late period level because of our sample from other areas, specifically Little Panoche Creek (Olsen and Payen 1968) and Los Banos Creek (Pritchard 1970).

The problem of tribal attribution is essential in our research plan, since this point clearly influences the choice of locality or region which will be most useful in making comparative studies. This specific problem has prompted considerable research on the nature of native life in the San Joaquin Valley as it is known from early historic and ethnographic sources.

HISTORICAL AND ETHNOGRAPHIC CONSIDERATIONS

Site Mer-130 is located nearly due east of Pacheco Pass near the juncture of the Merced, Santa Clara, and San Benito County lines (Fig. 1). This pass was utilized prehistorically by the population of the San Joaquin Valley and from early in the Spanish period as a route to and from the valley (Pilling 1955:80). Its historical importance, along with that of the camping location at the place termed San Luis Gonzaga, slightly to the east, has been pointed out (Heizer 1950:2). It is clear from the study of published historical documents related to Spanish and Mexican period intrusion into the San Joaquin Valley that Pacheco Pass was known and widely used prior to 1800 (Cook 1960). It is certain that any groups living in the area of the pass must have moved to the San Joaquin River/Marsh zone (Tulares) or were missionized prior to this date.

There exists a paucity of data on the west side Northern Valley Yokuts groups. Kroeber (1925: Fig. 72) indicates that only 1% or less of the native population in California were in the area as of 1910. In discussions of Yokuts population distribution, he further suggests that the west side of the lower San Joaquin Valley was unimportant, but was probably claimed by "one or more of their northerly tribes" (Kroeber 1925:476). The specific dialectic group is unknown ethnographically. We suspect, however, that the Little Panoche-Los Banos region between the San Joaquin River and the crest of the Diablo Range may have formed a block which would be comparable with claims of groups such as the Tachi in the southern San Joaquin Valley. They are noted as claiming both the Tulare Lake region and the dry plains to the Diablo portion of the interior Coast Range (Kroeber 1925:484). Latta (1949:14) assigns at least a portion of the northwest region of the valley to the Kawatchwah or Grass-nut people. This term, however, has no counterpart in either historic Spanish sources or in the ethnographic literature.

ENVIRONMENTAL BACKGROUND

Geologically, the area of Pacheco Pass is mapped as Franciscan formation, consisting of graywacke, localized red and green chert, siltstone, silty shale, minor conglomerate, limestone, blue-gray glaucophane-bearing schist, and related metamorphic rocks (California Division of Mines and Geology 1966). The area, of Jurassic or possibly pre-Jurassic age, is marked by extreme faulting and local areas of Miocene or Tertiary volcanic deposits. Several of the latter figure conspicuously in the topography of Pacheco Pass and San Luis Reservoir in general.

Site Mer-130 lies within a large area of soil mapped

in the Vallecitos Series. Its specific soil type is Vallecitos Stony Clay Loam, which "has developed in place on shale and sandstone rocks that have been somewhat metamorphosed and are harder than the more readily weathered rocks of the lower foothill and mountain slopes" (Cole et al. 1952:81). The surface of this soil type is stony, and rock outcrops are frequent.

The soil profile description indicates a soil of light brown to rich brown color, of cloddy texture with an admixture of angular rock fragments, from 8 to 40 in deep. The bedrock is sedimentary and metamorphosed sedimentary rocks with inclusive small quartz veins. The upper zone tends to be neutral while the basal material is alkaline. In the deeper deposits of this soil type, some profile development is apparent.

The immediate water supply for Mer-130 includes a small seasonal stream in the main east-west canyon upon which the site is located. A series of small springs occurs along the bed of a steep north-south lateral canyon which enters the main canyon immediately east of the site (Figs. 2, 3).

Climatic data are unavailable for the higher portion of the Diablo Range. Rainfall for the Diablo Range west of Pacheco Pass ranges from 20 to 30 in per year (Cosby and Watson 1927: Fig. 20). Precipitation figures for various San Joaquin Valley stations range from 10.26 in per year at Tracy in the north to 7.23 in at Coalinga to the south of our area (Cole, Gardner, and Harradine 1948:6; Harradine et al. 1956:6). Los Banos receives an average of 8.47 in annually, with most rain coming from December to March.

Temperature data also are not available for locations within the Diablo Range. At Los Banos, in the San Joaquin Valley to the east, the annual mean is 63.2°F, with a maximum of 110°F and a minimum of 20°F (Cole, Gardner, and Harradine 1948: Table 2). The site area proper (600-700 ft elevation), located just east of Pacheco Pass, in an east/west-trending canyon, is somewhat cooler in both summer and winter. In addition, coastal fog, which occurs commonly to the crest of the Diablo Range, sometimes extends inland and spills over the crest to the site area. This, plus the prevailing westerly wind through Pacheco Pass, creates a unique situation along the eastern edge of the Diablo Range in this vicinity. The overall result, at least for March through June, is cool to cold nights and moderate to warm days. The wind almost never ceases, tending to be gusty during the day. Though not ideal for permanent habitation, the canyons or lower ridges along the east side of Pacheco Pass provide abundant evidence of occupation (Olsen and Payen 1969; Pritchard 1970).

The vegetation of the Diablo Range differs considerably from that in the San Joaquin Valley proper. Three zones are definable in the general area. Most important were the Tulares or slough areas along the San Joaquin River. Adjacent to this, especially west of the Los Banos area, was the treeless plain (Santa Rita floodplain) or grassland. The area now inundated by San Luis Reservoir is essentially an extension of this grassland into the foothills of the Diablo Range. The range is marked by the occurrence of a distinctive vegetation pattern. Here, as opposed to the plains where few or no trees occur, there are abundant woodland-grass or chaparral areas. The principal trees include digger pine (*Pinus sabinia*), California blue oak (*Quercus douglasii*), white oak (*Q. lobata*), live oak (*Q. wislizenii* and *Q. agrifolia*), juniper (*Juniperus californica*), and buckeye (*Aesculus californica*). Along the stream bed below the site and along the courses of San Luis and Cottonwood Creeks to the east, there were scattered sycamores (*Platanus racemosa*), cottonwoods (*Populus fremontii*) and willow (*Salix* sp.). In the uplands, shrubs such as buckbrush (*Ceanothus* sp.), chamise (*Adenostoma fasciculatum*) and sagebrush (*Artemisia* sp.) are frequent, along with a variety of grasses. The most frequently noted among the latter are soft foxtail chess (*Bromus* sp.), fescue (*Festuca* sp.) and filleria (*Erodium* sp.). In addition to these, there are a vast number of bulbs including the grassnut (*Brodiaea* sp.). Of the herbs present, horehound (*Marrubium vulgare*) is an especially useful marker of aboriginal sites, even though it is not native to the area. A more complete list of shrubs and grasses is given by Cole *et al.* (1952:9). The species which occur clearly are those with an affinity to semi-arid regions. The foothill oak woodland is now used for stock grazing almost exclusively, while the San Joaquin Valley floor presently supports diversified agriculture.

The lowland slough regions originally, as at present, supported a large population of waterfowl. They are, in fact, one of the primary winter waterfowl zones in the United States. The faunal assemblage from the Diablo Range and foothills includes deer, which are still abundant, as well as a variety of smaller mammals. Possibly most important of these would be jackrabbits, brush rabbits, and cottontails, along with the ever-present ground squirrel. Both quail and doves are frequent in the uplands.

Freshwater shellfish and various species of fish were abundant in the lake and slough region, although they were probably essentially lacking in the streams draining the Diablo Range. Preliminary study suggests that fish were an important item at some sites along the western edge of the valley, but their remains were infrequent at Mer-130. Since the deposit was primarily passed through 1/4-in rather than 1/8-in or smaller mesh screen, this apparent

scarcity is overemphasized, however.

SITE DESCRIPTION AND EXCAVATION PROCEDURES

Site Mer-130 is small, in part due to its location at the extreme end of a ridge between two ravines (Figs. 2, 3). The larger ravine, which trends east-west, originates immediately north of Pacheco Pass and ultimately levels out just short of Cottonwood Creek in San Luis Valley. It was dry during most of our fieldwork (March to June 1968) but must carry considerable runoff during the winter months. The smaller ravine, to the east of the site, contains a series of small springfed ponds in bedrock basins. All of these contained water up to our departure in late June. Probably this spring (or series of springs) runs year-round, an observation supported by the location of a large midden site (Mer-126) just 30 m south (upslope) of Mer-130. Though this site has not been extensively tested, it is likely that Mer-130 represents an outlier of the large village. No surface house remains are present at the larger site, but it obviously has a late component which may be dated to the late (Panoche) period.

The deposit at Mer-130 is extremely dark, loose-textured, and rocky. It contains mammal bone and chipping detritus, with little shell. Due to the slope of the ridge, along with the irregularity of bedrock and subsoil, the depth of deposit varied from unit to unit. Upslope units went from 45 to 60 cm deep, while in the center of the deposit several units reached depths of 165 to 180 cm. Below this dark soil was a thin layer of brownish deposit which rested upon a sterile yellowish soil. There are hints that the brown deposit represents an older occupation than the dark midden, although this is based mostly on its compactness and sparse cultural content. Few objects were clearly derived from this stratum, since it was badly disturbed by grave pits and by rodents. The late artifactual material from deep in the deposit, however, was invariably from pit-fill or rodent burrows.

Thirteen units measuring 2 by 2 m or slightly less were excavated, plus a small portion of an additional unit to expose a burial. The latter was only screened around the interment and thus is not included in the tabulations. The amount of processed midden totaled ca. 66.5 m^3. Of this, about 75% was screened through 1/4-in mesh and the remainder through 1/8-in mesh.

ARTIFACTS RECOVERED

Data on chippage, shell, and bone detritus are presented below (see Midden Constituents). No accurate determination was made on the rock content of the deposit, but it was much the same as that of the upper levels in the nearby Grayson site, Mer-94 (Olsen and Payen 1969).

A total of 934 artifacts was recovered from Mer-130. Only 16% of the assemblage accompanied burials, and most of the grave-associated items consisted of shell beads. By material, the collection may be divided as follows: shell, 40%; bone, 7%; chipped stone, 41%; ground stone, 8%; and polished stone, 4%. At least 50% of the artifacts are of local derivation. Imported items include all of the shell beads, ornaments, and some of the polished stone objects. Probably the steatite objects were not locally manufactured, as known sources of this material are not adequate to explain the obvious differences in color and texture.

Shell Artifacts

Olivella Shell Beads

A total of 332 *Olivella* shell beads was recovered from the site. Of these, about one-third were grave-associated and the remainder are from the midden (Tables 1, 2).

Eleven *Olivella* bead types are recognized in the collection on the basis of a recently formulated typology by Bennyhoff and Fredrickson (n.d.).

Spire-lopped *Olivella* beads (Type A) include those with broken and ground spires (Fig. 4a, b). The small form (Type Ala, 5.0 - 6.5 mm diameter), occurred frequently in the midden and was found with Burials 5 and 6. The medium form (Type Alb, 7.0 - 9.5 mm diameter), clearly the dominant bead type, occurred from top to bottom of the deposit and with three burials. The large form (Type Alc, 10.0 mm diameter), occurred rarely in the midden and with only two burials. The Type A *Olivella* beads occur at all levels but cluster below 75 cm (Table 2). This cluster clearly represents the use of beads as mortuary offerings with burials which occurred in the lower levels. Most likely the beads were thrown in the grave pit during the backfilling rather than being placed in direct association with the body.

Of the 253 spire-lopped beads, a significant proportion (62%) have broken rather than abraded spires. This trait has also been noted among the spire-lopped *Olivella* beads from other late sites (Fre-128, Fre-129, Mer-94) but its possible temporal significance is not yet clear (Olsen and Payen 1968: Table 17, 1969:14, Table 2). Conceivably, this attribute may

merely reflect source of supply, rather than a cultural preference by the site inhabitants.

The size range of the spire-lopped beads from Mer-130 is in agreement with the data from the Little Panoche sites and from Mer-3 on Los Banos Creek (Olsen and Payen 1968:88; Pritchard 1970:23, Table 11). A preference for medium-to-large (over 7 mm diameter) *Olivella* shells is evident from all the late sites in the area. The relative abundance of spire-lopped beads at Mer-130 and Mer-3 is of interest in light of their scarcity at the Little Panoche sites. Possibly differing trade relations are indicated, based on proximity to a trade route across Pacheco Pass.

Type B *Olivella* beads include those with grinding on both the spire and orifice ends (Fig. 4c). These beads occurred only in the small and medium size range. End-ground beads are not frequent in the Los Banos region, but have been noted in the collections from other sites, although they are not distinguished in the published reports.

Another rare bead type is the side-ground or appliqué *Olivella* bead, 01 or A5 in the Bennyhoff-Fredrickson typology (Fig. 4d). Only two of these beads occurred at Mer-130, both in the upper midden levels. They are reported from both Little Panoche (Olsen and Payen 1968: Tables 1, 2, 17, 18), and Mer-3 (Pritchard 1970:25, 143-144, Tables 11, 41). They appear to be restricted to the late period in the Los Banos region.

The remaining bead forms are cut sections of *Olivella* shell. Most distinctive are the thin-lipped Type E1 beads (Fig. 4e-g), equivalent to the small Type 3a1 variant recovered from Little Panoche (Olsen and Payen 1968: Tables 1, 2, 3, 17, 18). The beads from Mer-130 have a slightly greater size range than the small 3a1 beads from Little Panoche; however, they definitely are not of the larger full-lipped form. Four variants lacking the lip (Fig. 4h) have been tabulated with the typical E beads.

Probably related to the E1 beads are the Type C8 amorphous or rough disk beads (Fig. 4i). The small number of these poorly made disk-shaped beads, along with their association with Type E1, suggests that they are a related form at the site. Several of these beads are similar to the oval *Olivella* bead.

The last bead form is a thin rectangle with a central perforation (M1a) (Fig. 4j). Only one example occurred, ca. half-way down in the midden. This bead type (old 2a1) is diagnostic of the Late Horizon Phase I period in the Delta and the coeval Gonzaga complex in the Los Banos region (Bennyhoff and Heizer 1957:67; Olsen and Payen 1969; Riddell and Olsen n.d.). The type is known from other dominantly protohistoric sites, suggesting that the initial occupation at Mer-130 was in the Gonzaga period. The end-perforated rectangular *Olivella* bead (old Type 2a2) occurs in rare instances in a protohistoric context at Mer-3 (Pritchard 1970:23-24, Table 11). Distinctive examples of this bead form were confined to the midden fill in a single structure at Mer-3. These data suggest they are not typical, or at least abundant, in the defined complexes for the Los Banos region.

The shell bead complex at Mer-130 certainly relates to the late protohistoric period as evident at Little Panoche and Mer-3. Lack of several diagnostic bead forms found at these other late complex sites argues for varying routes of trade, unknown cultural factors, or a slight temporal difference in the assemblage at Mer-130.

Haliotis Shell Ornaments

Forty-eight *Haliotis* shell specimens were recovered from the site. Included are two complete ornaments, one bead, a variety of ornament fragments, and 34 unidentifiable fragments (Tables 3, 4).

The identifiable ornaments include two small subrectangular pieces (Fig. 4s, t). One is perforated near one end (Type MB1) and the other is perforated both near one end and apparently in the center (Type MB(1)1). It is now broken across the central perforation. These specimens were associated with Burials 6 and 5, respectively.

The last complete ornament is ovoid or slightly crescentic in outline with twin perforations near the edge of the concave side (Fig. 4u). It was associated with Burial 6.

Fragments of "eared" or "tabbed" *Haliotis* ornaments (Gifford 1947: Type M2d) were recovered from the midden, all above 75 cm. One fragment has incised-edge decoration; one is plain; and the last is a small fragment of the tab or "ear" portion of a third ornament (Fig. 4p-r).

Two perforated fragments appear to be from large rectangular or squarish pieces (Fig. 4v). Neither fragment is complete enough to indicate the original shape. Two other fragments suggest the original form. One has tapered sides but is broken at both ends, and has been burnt (Fig. 4w). The second is a roughly-shaped triangular piece, which may represent a reworked or unfinished ornament.

The incised fragments are small sections with one

decorated edge. Three have V or X incising while the last has simple, deep straight lines. One fragment may be from a circular ornament (Fig. 4n, o).

Unidentifiable worked or unworked *Haliotis* fragments were frequent in the deposit. They occurred more frequently in the upper 75 cm, but examples were recovered from deeper levels. The overall distribution of the *Haliotis* specimens suggests an emphasis on the working of shell during the terminal portion of site occupancy; all typable ornaments are late forms in the region. Comparative data on the shell ornaments from the Los Banos region are scanty, however, as most sites produce few complete specimens.

The Type MB ornaments are not restricted to any temporal period in central California. They are infrequent in the Los Banos region, but rectangular or subrectangular ornaments were recovered from Mer-3 in a late context (Pritchard 1970:28) and from the Little Panoche area (Olsen and Payen 1968:44).

The oval ornament is not easily classified on the basis of outline; no comparable specimens were noted in the literature.

Examples of the remaining ornament form, the "tabbed" variety, Gifford's (1947:20, 78) subtypes M2dI and M2dII, are known from Fre-129 (Olsen and Payen 1968:44, Fig. 134) and from Mer-94 (Olsen and Payen 1969:8, Fig. 8oo). Gifford's data show this form most frequent in the Stockton Delta area, with one occurrence at a Sacramento Valley site, Col-2. A single ornament of this type occurred in the upper portion of Ala-328, associated with Type 3al lipped *Olivella* beads (Davis and Treganza 1959: Table 2). It is assigned to the site's latest occupation (Component A), placed in the Late Horizon Phase II period of the Fernandez Facies, Alameda Province (Davis and Treganza 1959:69). This temporal assignment (protohistoric) undoubtedly is consistent with the Delta occurrence noted by Gifford (1947:20), but associational or temporal data are not available for the examples from Col-2.

The incising styles noted on the ornaments at Mer-130 include simple straight lines (Gifford 1947:4, Style 2; Lillard, Heizer, and Fenenga 1939:14, Style A) and V or edge crosshatching (Gifford 1947:4, Styles 4, 5; Lillard, Heizer and Fenenga 1939:14, Styles e - g).

As no analysis of incising styles has been published, it is not feasible to attempt comparisons of decoration designs on shell ornaments from the Los Banos region. It is clear, however, that the distinctive ornament forms here are related to those from the Sacramento-San Joaquin Delta region. Few distinctly southern San Joaquin or southern California ornament types occur, indicating that trade in *Haliotis* objects must have been preponderantly with groups around the Delta.

The single disk bead of *Haliotis* is made from the nacreous portion of the shell (Fig. 4m). The epidermis has been split rather than ground off. The central perforation is biconically drilled. Beads of this type were recovered from Fre-129 (Olsen and Payen 1968:43). They clearly date to the late protohistoric or early historic period in this instance.

Bone and Antler Artifacts

In the main, the bone and antler artifacts from Mer-130 are limited to utilitarian forms or those described as such in the ethnographic literature (Tables 5, 6). The bone and antler assemblages from previous excavations in the Los Banos region indicate little development of the ornamental or ceremonial use of these materials. Birdbone whistles and incised tubes are the most frequent nonutilitarian objects of bone in the region (Pritchard 1970:20-21; Olsen and Payen 1968, 1969), and these are not overly plentiful when contrasted to the Sacramento-San Joaquin Delta late period assemblages (Lillard, Heizer, and Fenenga 1939:79-80; Schenk and Dawson 1929:349-356, Figs. 5, 6, Plates 28, 79).

Metapodial Awls

Three split metapodial awls were found, two from the midden and one associated with Burial 4 (Fig. 5a, b). All of these are fashioned from split half-to-third segments of deer metapodial with the proximal end serving as a handle. The shaft in all cases is modified by percussion rather than by grooving and splitting. This type corresponds to Gifford's (1940:168, 200) Type AlbII, which is clearly the dominant form from many areas of California. Within the Los Banos region the type occurs, but well-fashioned awls are the exception rather than the rule (Pritchard 1970:18; Olsen and Payen 1968:14, 45, 1969:21). There are indications that well-fashioned awls are more frequent in the protohistoric Panoche period, but data from earlier periods do not clearly support this hypothesis at present.

Splinter Awls

Two roughly-fashioned split segments of heavy mammal bone, both blunt-pointed, were found in the midden (Fig. 5c). Neither appears suitable as a basketry awl. They are identical to specimens from

Mer-94 and elsewhere in the region. Presumably they served as heavy duty perforators, flakers, or possibly as matting tools (Olsen and Payen 1969:21-22, Figs. 10q, s, lla - c, Pritchard 1970:19). Pritchard points out in his analysis of tip form in the Mer-3 awls that definite, shouldered basketry awls with thin narrow points are not frequent at that site (Pritchard 1970:19).

Awl Fragments

Fourteen awl medial or tip fragments occurred in the deposit, all but one above 75 cm (Fig. 5d-h). One was associated with Burial 5.

Of the nine tip fragments, only three are slender and well polished. They definitely suggest use as basketry fabricators. The remaining six specimens have heavy blunt tips like those of the splinter awls described above.

Scapula Saws

Six trimmed deer (or antelope?) scapulae were recovered from the midden. Two are small sections (one right and one left scapula) from the blade portion of the tool; each includes a small area where the spine had been trimmed off. The remaining four examples are all fashioned from right scapulae (Fig. 5i). All have the spine and axillary border trimmed off by percussion rather than cutting. The resultant rough edges have been ground smooth in several instances. Wear is apparent along the coracoid border in two instances, while in three other instances little or no wear is apparent due to breakage or decomposition of the bone.

Though individual specimens differ from site to site, or even within a site, it is clear that scapula tools are frequent in the Los Banos region. They occur here in all periods (Olsen and Payen 1968:15, 1969:22-23; Riddell and Olsen n.d.), although they were apparently lacking at Mer-3 (Pritchard 1970). According to Davis and Treganza (1959:49-50, Table 15) they occur throughout the occupation of Ala-328 in the south San Francisco Bay region. Bennyhoff's (1953:268-269, 298-299) discussion of these tools in the Napa and San Francisco Bay regions indicates that they are rare in the Sacramento Valley and Delta region, but occur in the Late Phase II period in Marin Province. The distribution as now known suggests that future work along the interior of the South Coast Range between the Delta and the Los Banos region will reveal a continuous distribution of this artifact type.

Spatula Fragment

A fragment of split rib with cut edges is the single spatulate artifact from the site. It has been ground smooth on all surfaces and is well polished (Fig. 61). The dark color and the depth at which the specimen was recovered (105-120 cm) suggest that it may date from an earlier phase of occupation than the bulk of the material from the site. Spatula fragments were fairly frequent at nearby Mer-94 (Olsen and Payen 1969: Tables 7, 8) but they presumably precede the major occupation at Mer-130. Their distribution at Mer-3 suggests they are rare in the protohistoric component, but one spatula fragment occurred with Burial 4, dated to the early portion of the site's occupancy (Pritchard 1970:156, Appendix la).

Bone Pin

One narrow, tapered, solid bone segment with an oval section is classed as a pin (Fig. 6m). Like the spatula fragment, it is discolored and was recovered somewhat deeper than the majority of the other artifacts.

Narrow bone tools such as this occurred rarely at Fre-128 and Fre-129 (Olsen and Payen 1968:14-15, 46) and were relatively more frequent at Mer-94 (Olsen and Payen 1969:22).

Possible Fish Spear Fragment

A small section of cut antler appears to represent the basal portion of a fish spear. It has been completely shaped by cutting, and the base originally had a "heel-like" projection presumably to facilitate hafting (Fig. 6k). It is similar in this respect to Gifford's (1940) Type MM2a, 2b or 001, 002 fish spears. The distribution of these fish spear types suggests Delta influence, although by the protohistoric period, bilaterally barbed harpoons were dominant in this area (Bennyhoff 1950). Two almost identical pieces, also fragmentary, termed "fish-tailed objects," were recovered from Mer-3 in a protohistoric context by Pritchard (1970:21-22, Fig. 25d, e).

The limited ethnographic data available on Yokuts groups within the San Joaquin Valley proper (Tachi) indicate that they used a single pointed harpoon with a point about 2 in long fashioned from a pelican (?) wingbone (Gayton 1948 I:15). Conceivably, these short antler points could represent this type of implement.

Other possible fishing implements from the region include a single bipointed bone piece from Mer-94.

Its depth within the site indicates that it antedates the antler objects observed here (Olsen and Payen 1969:22).

Antler Flakers

Two small segments of antler appear to represent flaking tools. One is a scorched tine fragment with the tip abraded and scratched from use (Fig. 6j). The second is a cut split fragment with the cut end modified by scratching and abrasion (Fig. 6i). The diameter and condition of this fragment suggests use as a punch or drift. Both were found in shallow levels of the deposit.

Mammal Bone Tubes

Three heavy bone tubes were recovered below 90 cm in the midden. Two (one whole, the other fragmentary) are light colored while the last, also fragmentary, is dark brown due to burning (Fig. 6a). All three are well made and highly polished.

Comparative specimens from the Los Banos region are rare. Pritchard (1970:20) reported a large number of bone tubes from Mer-3, although these include bird as well as mammal bone examples. They clearly occur throughout the occupation of this site. One example was found at Fre-129 in a protohistoric context (Olsen and Payen 1968:45), and three very small fragments are reported from Mer-94. Two of these are from the upper levels of the deposit, suggesting that they date to the protohistoric period at the site (Olsen and Payen 1969:11).

In all likelihood, these artifacts served as gaming pieces like those shown for the Miwok by Barrett and Gifford (1933:265-266, Plates LVII 9-14, LXXI 2, 3). They are described as about the size of a man's first finger, which clearly fits the complete example from Mer-130.

Bird Bone Tubes

All of the bird bone tubes recovered derive from the upper 60 cm of the midden (Table 6). Of the eight specimens, two are complete and the remaining six are fragments of what were fairly large diameter tubes when complete. Four of the broken examples have one cut end and two, one calcined, are medial sections. Two of the former may be from the same tube, but do not now fit together.

The two complete tubes (one small and one of large diameter) (Fig. 6c, d) both came from Unit A-1 (Fig. 2). Though broken and separated, they may have originally accompanied Burial 1 which lay just below them. The small tube was inserted into the larger one when recovered, suggesting that they represented raw material rather than finished artifacts, although the ends are cut off and ground smooth.

Plain bird bone tubes occur throughout the Los Banos region. They may be more frequent in the protohistoric period, since at Mer-3 (Pritchard 1970:20, Table 10) they were relatively more frequent than at Mer-14 and Mer-94 (Riddell and Olsen n.d.; Olsen and Payen 1969: Table 7). They were infrequent at the Little Panoche sites, however, (cf. Olsen and Payen 1968: Tables 4, 21), suggesting that further distributional data on specific artifact forms is required.

Incised Bird Bone Tubes

Two small incised fragments of bird bone represent this class. The patterns consist of simple encircling double bands filled with crosshatching (Fig. 6e). They are comparable to those from Mer-3 (Pritchard 1970:20, 21, 82-84, Table 10, Fig. 26lm) and from Little Panoche (Olsen and Payen 1969:14, 45, Tables 4, 22, Fig. 15j-m).

On the basis of greatest frequency and elaboration of design elements, we assume that this trait diffused southward from the Sacramento-San Joaquin Delta region to the Los Banos region. Bennyhoff's analysis (1953) of this art form in central California is presumptive evidence for this argument. It is clear that work in the intervening area, however, would be desirable in tracing the spread of such distinct elements.

Bone Beads

Five short segments of small mammal or bird bone with trimmed ends are presumed to have served as beads (Fig. 6f-h). All are from the upper 60 cm of the deposit and thus clearly are associated with the terminal assemblage at the site.

Similar specimens are known from most sites in the area. They apparently lack temporal sensitivity since they occurred at all levels in Mer-94 (Olsen and Payen 1969:8).

Bone Whistles

A single undecorated bird bone whistle fragment was recovered from the deeper levels of the site. The length of the fragment suggests that it is of the off-

centered-hole variety. It thus presumably precedes the protohistoric period on the basis of data from Mer-94 (Olsen and Payen 1969:11-12, Fig. 9h, i, l). Identical examples occurred at Mer-14 (Riddell and Olsen n.d.) but they apparently were not found at Mer-3 (Pritchard 1970: Fig. 13f).

The second whistle, made of mammal bone, is decorated with a paired zigzag or triangular design (Fig. 6b). The hole is essentially centered on the concave side of the shaft. The mouthpiece end of the shaft has been tapered and is discolored, presumably from saliva. The presence of an asphaltum plug is evident in staining of the bone below the hole and by small flecks of asphalt still present on the interior of the shaft. The hole was produced by cutting V-shaped sections from the sidewall of the shaft.

Two other mammal bone whistles, both undecorated, are known from the region, one from Mer-94 and one from Mer-3 (Olsen and Payen 1969:-12; Pritchard 1970:20, Fig. 26s). The example from Mer-3 is identified as a bobcat bone. Decorated bird bone whistles, however, were recovered from Mer-3 (Pritchard 1970:Figs. 25a, b, 26p). They are apparently infrequent in the Delta region (Gifford 1940:182, 230, Type FF3), and according to Bennyhoff (1953) are restricted to the Late period in this area. Presumably, they represent further evidence for diffusion of a Delta trait into the Los Banos region.

Polished and Cut Fragments

These fragments for the most part defy typing or description. We suspect that they represent broken, discarded, or unfinished bone tools, probably for perforating. Their concentration in the upper 45 cm of the deposit is clearly in accord with the distribution of the majority of bone artifacts.

Chipped Stone Artifacts

Projectile Points

A total of 203 whole or fragmentary projectile points was recovered from the site, an average of ca. 3.5 specimens per m^3 of deposit (Tables 7, 8). This is a surprising figure inasmuch as one site in the region (Mer-14) has produced less than a dozen points, and a second (Mer-3) produced only a few typable specimens. Other sites in the locality (Mer-94, Fre-128, Fre-129) have produced sizable projectile point samples. As yet, we cannot suggest a possible hypothesis for this apparently skewed distribution.

The projectile points from the site may be segregated into two distinct classes on the basis of size and weight. The small points comprise 84.7% of the sample. All of them weigh less than 3.2 gm; their average weight is considerably less than this. The large points, 15.3% of the sample, all weigh above 4.0 gm. There is no clear-cut depth distinction between the small and large points, and we assume that the few large points may be part of a single projectile point assemblage.

Small Triangular Points

A total of 30 small triangular points was recovered. On the basis of outline, degree of retouch, and to some extent size and weight, three subtypes may be segregated among the triangular points.

Triangular 1 (seven specimens) consists of completely retouched examples with a gently concave base (Fig. 7ff, hh, jj). Two are slightly recurved near the base, producing an eared effect. Five of the seven occurred above 45 cm, with four in the 15 to 30-cm level.

Triangular 2 (20 specimens), although basically triangular in outline, has a base which is concave, straight, or very slightly convex (Fig. 7gg, ii, nn, rr-tt). The chipping of these points is less refined than on the Triangular 1 examples. Many appear to be broken, unfinished examples, while others are simply convenient flakes with modified edges. In most instances the original flake scar shows on one or both sides. The seven complete examples could easily have been used as projectile tips, but several of the basal fragments seem gross for such use.

Like the Triangular 1 points, the Type 2 specimens cluster in the upper portion of the deposit. Only one example occurred below 60 cm, and it may represent a reworked tip segment from a larger point.

The Triangular 3 points (three specimens) are all short with concave-sided blades and concave bases (Fig. 8e, f). The blades are relatively thick, suggesting that these points, in actuality, may have served as hafted drills or reamers. None exhibits wear along the edges or tip, however. They have the same depth range as the other triangular points.

Triangular projectile points with concave bases are extremely widespread in California and elsewhere (Elsasser 1960:32, endnote 4). At Mer-130 they comprise ca. 23% of the typable points. Comparable specimens were recovered from two sites in the Little Panoche area (Olsen and Payen 1968:16, 47, Tables 6, 23, Fig. 26a-c), where they made up 24% and 26% of the projectile point samples. Other occurrences in the southwestern San Joaquin Valley in-

clude Elk Hills (Walker 1947:6-7, 22) and Buena Vista Lake (Wedel 1941: Type NBb, 61-62, 98, 114, Table 8, Plates 38a-n, 39a-c). They clearly are part of the late complex in this area (Wedel 1941:138-140). Points of this type (NBb) occurred in the Alpaugh and Tulare Lake regions, but were frequent only in the Lake region (Gifford and Schenck 1926: Table 8) where they made up 45% of the total sample. Significantly, obsidian points of the type were rare, as is the case in the Los Banos region.

Along the western slope of the Sierra Nevada the type occurs, usually made of obsidian (Henn 1969:6; Moratto 1969:90; Fitzwater 1968:287, Type 4; Bennyhoff 1956: Fig. 3a-f). They are dated at post A.D. 1000 by Fitzwater in the Yosemite region, and are part of the late complex in the Chowchilla region.

Triangular concave-based points are frequent in the Chumash area, where they are diagnostic of the period A.D. 1500 to 1804 (King, Blackburn, and Chandonet 1968:39, 65-66, Projectile Point Type 1, Chart 1). Wedel's comments (1941:64-66) on this point type are pertinent in tracing their distribution, since as he notes, they are rare or nonexistent in the Sacramento Delta region (Lillard, Heizer, and Fenenga 1939).

The type is unrecorded in the Monterey Bay Region (Pilling 1955), but data are poor and based on surface collections. Triangular points, however, are not reported by either Evans (1967), or Pritchard (1968) from the same area.

Panoche Side-Notched Points

This point type was defined on the basis of the analysis of projectile points in the Little Panoche Reservoir area, at Fre-128 and Fre-129 (Olsen and Payen 1968:17). Panoche Type 1, the most frequent form, is basically triangular with large U-shaped side notches and a gently concave base. On some examples the blade is markedly saw-toothed (Fig. 7a-e, g-l, n-t, w, x, z-ee). A second form, not originally distinguished, has a deeper concave or V-shaped base, producing an eared or even basal-notched configuration (Fig. 7f, m, u, v, y). The sample of these points from Mer-130 conforms to that from Little Panoche: out of 97 points, only three are of obsidian; the remainder are of varicolored silicates.

The depth distribution indicates that they are extremely frequent above 90 cm in the deposit, with few occurrences below this point. These few deeper examples probably result from disturbance due to excavation for grave pits.

Areal distribution of this type is still poorly known. A series of small side-notched points recently recovered from Lopez Reservoir, San Luis Obispo County is similar in form (Franklin Fenenga, Department of Anthropology, California State University at Long Beach, personal communication). The occurrence in this area supports our original hypothesis that the type is indigenous to the South Coast Range (Olsen and Payen 1968:17). Clearly, further work is needed to define the range of this subtype as opposed to the Desert side-notched subtypes (Baumhoff and Bryne 1959), but undoubtedly work in the South Coast Range and Salinas Valley regions would provide pertinent data. The rarity of Panoche side-notched specimens in southern California is unexplainable at this time, since they occur both to the north and in San Diego County. Glassow (1965:51-52) suggests that the form was probably not accepted in the Los Angeles region, although he recovered points of this type (1965:36) from Ven-69. Most of the points from this site were triangular, however.

Large Projectile Points

Five large points, or knives, were recovered, all of different forms (Fig. 7: oo-qq). Three of the points, two silicate and one obsidian, are stemmed. The largest is shouldered with a tapered base, while a second example is corner-notched with an expanded stem. The last is shouldered with a wide, short stem. This specimen, made of obsidian, exhibits some alteration of the flake scars, suggesting that it represents reuse of an older point.

The two nonstemmed large points include a leaf-shaped or bipointed example of obsidian, also weathered, and a short, wide, side-notched point with a flat base.

These large points resemble those recovered from Mer-94 in that large stemmed, side-notched, and leaf-shaped forms were dominant at this site (Olsen and Payen 1969: Figs. 14-16, Types 1a, 3, 6, 7b). It is unlikely that these few points at Mer-130 represent the possible earlier occupation mentioned above. It is more likely that they were picked up at other sites, or that they represent spearpoints or knives of late derivation.

Projectile Point Fragments

The tabulation of the fragments suggests the two-phase occupation, based on relative abundance of large point fragments below the small points and fragments.

Knives, Drills, Scrapers, and Cores

A large number of chipped stone tools other than

projectile points occurred at Mer-130 (Tables 9, 10). As has been pointed out elsewhere (Olsen and Payen 1969:32), chipped stone tools are frequent in the Los Banos region.

Ovate Knives

Three small ovate bifacial pieces are classed as knives. The two obsidian examples appear to be reworked large projectile point fragments. Both have worn, blunted edges. The chert piece, badly burnt, exhibits poorly controlled bifacial primary flaking but no retouch or use wear. All occurred below 45 cm in the deposit. The Mer-130 examples are similar to the biface knives from Mer-94, although at the latter site these artifacts are of greater frequency (Olsen and Payen 1969: Table 12, Type 2, Fig. 18 l-o).

Biface Flake Knives

These are irregular flakes which are distinguished by bifacial retouch along one or more edges (Figs. 12h, j, 17a-e). Although these specimens tend to be elongated, no consistency of form can be observed. Several could be reused projectile point fragments, but this is clearly the case only for one obsidian example. A slate specimen has a badly crushed edge, but remnant flake scars suggest that originally it had a fine sharp edge.

These specimens are marked by bifacial retouch, but they probably served primarily as scraping rather than cutting tools. Presumably, this implies a function in the same basic process which created the necessity for the entire tool kit of small scraping and cutting implements. This assemblage is indicative of woodworking and/or basketry material preparation. The same function has been suggested for the assemblage from the Little Panoche area (Olsen and Payen 1968:19, 49). These artifacts are most frequent above 45 cm in the deposit at Mer-130.

Biface Blanks

Two crude percussion-flaked fragments are classed as blanks. Both are thick; the form intended for them cannot be discerned. They may have been rejects, since the material exhibits numerous fracture planes which would prevent ease of manipulation.

Drills

Nine drills, whole and fragmentary, were recovered from Mer-130 (Fig. 8a-d). Eight of these c curred above 90 cm in the deposit and six were abo 60 cm.

Five of the six classifiable specimens are fashion from narrow, elongate flakes struck from cores wi prepared platforms. The bits are thick and biconv in cross section, finished with fine retouch. The ba end is the enlarged portion of the original flake.

The sixth specimen, of obsidian, appears to be reworked point fragment. It also has a wide base an carefully chipped bit.

Two of the three fragments appear to represen artifacts similar to those described above. The third is a heavy, thick fragment of obsidian, probably fashioned from a projectile point tip segment. Possibly it is significant that it occurred at 120-125 cm, well below the more delicate silicate drills.

Heavy thick-shouldered drills occurred at Mer-94 in an early context (Olsen and Payen 1969:23, Tables 11, 12). Small light drills of silicate are a rare late trait in the region. The flake drills described here are not reported from other late sites in the locality (Olsen and Payen 1968:19, 48, 50, Fig. 27 l-o).

Pointed Flakes (Gravers)

Three triangular, essentially plano/convex flakes appear to be flake graving tools, although none seem to be purposefully manufactured (Fig. 8g-h). The two obsidian specimens probably are projectile point tip fragments modified only slightly. The silicate example is fashioned from a thick flake, with two sides roughly serrated and the base unmodified. The serrations could have served as spokeshave scraping edges, possibly on fibrous stems or small shoots, since they measure 3-5 mm across. The tip of the piece is also slightly worn. Similar tools are known from the Los Banos region, but apparently were not confined to any particular period.

Gouges

This tool type is provisional since several other forms could easily have served the same function. The modified flakes classed as gouges all share the same attributes, however. All five have a narrow squared end which has been purposefully modified by secondary retouch to form a transverse working edge (Fig. 8i-l).

On four of these tools other edges were left unmodified, strongly indicating that a heavy-duty goug-

ing tool was the desired product. These pieces add support to the postulated woodworking industry represented in the upper levels of the deposit.

Prismatic Blade Scrapers

Three elongate utilized silicate flakes with triangular cross sections appear to represent a distinctive, though rare, blade tool (Fig. 8m-o). While this very specific form is probably accidental, it is clear that the production of flake tools from prepared cores is a distinct trait in the Los Banos region during the protohistoric period (Olsen and Payen 1969:39). They are of interest in that they indicate a degree of sophistication in stoneworking in this region, as is also evidenced by the projectile point series from this area.

Flake and Steep-Edge Scrapers

By far the most abundant artifact forms at Mer-130, other than projectile points, are small scraping tools. There can be little doubt that they make up an integral part of the chipped stone assemblage from the site.

The flake scrapers, as opposed to the steep-edge scrapers, are only slightly retouched, or the retouched edge is rather thin and fragile. All but one are of silicate, and they, for the most part, are made on thin plano-convex or tabular flakes with the long edge or edges modified (Figs. 9, 10, 11). A small fragmentary specimen made of bottle glass indicates that occupation of the site continued at least to the contact period, ca. A.D. 1780-1790 in the region.

Steep-edge scrapers have a plane-like worked edge, although they have the same dimensions as the flake scrapers. Presumably, the difference is one of function, in that they were more durable than the thin-edged scrapers (Fig. 12a-g, i).

Both of these scraper forms suggest use as woodworking tools. Few have badly worn edges, and what wear is observable is not that which would occur from the working of stone or bone. They appear to have served as tools for tasks such as smoothing wooden objects or stripping bark from small limbs.

The abundance of well-made scraping tools is a distinct trait in the Little Panoche area (Olsen and Payen 1968:19, 49-50, Fig. 28), and those from Mer-130 are clearly related to the same cultural expression.

Core Scrapers and Cores

Fifteen silicate cores, utilized and unutilized, were recovered, most of them in the upper portion of the deposit. They correspond well to the overall distribution of the scraping tools and projectile points in this respect.

The unused cores include two randomly flaked nodules apparently rejected due to internal flaws. One is a cherty cobble flake, with Burial 9, which may have served as a chopping tool, although no wear is noticeable. The last two unutilized cores are thick, subrectangular forms with squared ends. They probably represent remnants of larger cores (Fig. 13k).

The utilized cores are either plano-convex or block-like. They have been retouched along one or more margins to produce a small plane-like or chipping-cutting tool. Their size suggests that they represent exhausted cores retained for use as heavy planing or scraping tools (Fig. 13f-j).

Small globular cores or flaked nodules of silicate are extremely frequent in the Los Banos region, in several instances (Mer-14, Mer-94) to the exclusion of other chipped stone tools (Olsen and Payen 1969:-24, Figs. 21e-f, 22a-d; Riddell and Olsen n.d.). A great many core and flake tools occurred at Mer-3 (Pritchard 1970:7-9), though few of them were of silicate.

Polished and Miscellaneous Stone Artifacts

A total of 36 polished or miscellaneous stone artifacts was recovered, only one of which was in burial association (Tables 11, 12). Included in the miscellaneous category are red pigment lumps, quartz crystals, actinolite splinters, and unworked calcite nodules. None of these are modified from their natural form, but all were imported by the site inhabitants.

Stone Disk Beads

Two stone beads were recovered, one of steatite and one of slate (Fig. 4k, l). The steatite bead is disk-shaped with a biconical perforation. The slate bead is roughly disk-shaped with a punched or pecked, rather than drilled, perforation. The slate obviously is of local derivation. Steatite disk beads are an integral element in the late bead complex in the Los Banos region (Olsen and Payen 1968:12, 43; Fig. 13s, 1969:39).

Rectangular Stone Bead

A unique thin, rectangular, biconically perforated

serpentine object is classed as a bead, though possibly the term ornament would be more appropriate (Fig. 14g). It is made from a well-polished thin section of very dense mottled greenish-white serpentine. The ends are squarely cut off and polished. The biconical perforation has been gouged or cut rather than drilled and is slightly polished from string wear.

No comparable beads are known from the locality, although a variety of perforated slate objects was found at Mer-94 (Olsen and Payen 1969:9-10). Several of greenish jade (?) are somewhat comparable in texture, suggesting that deposits of serpentine or jade-like material were located at not too great a distance. The depth of this specimen suggests that it predates the latest occupation at the site, though one distinctively late *Olivella* lipped bead occurred at the same depth in close proximity.

Earplug Facing

This unique object is a thin oval section of polished calcite with a serrated periphery. The dorsal side is thickly coated with asphaltum which retains the mirror image of the roughened concave portion of the earplug (Fig. 14c). It indicates that the inset surface of the plug was purposefully gouged and roughened to hold the mastic in place. Identification of function for the specimen is strengthened by the recovery of a stone earplug with a coating of asphaltum still in place, although the facing is now missing. It is probable that the plug in the calcite example was of wood rather than steatite.

Facings of clam shell or stone are known from the Los Banos locality, in the form of imperforate disks with incised or plain margins. They are comparable in most respects to the present example (Olsen and Payen 1968: Figs. 13u, 16h). Pritchard reported a "fossil" shell disk with incised edge decoration associated with a late period cremation at Mer-3 (1970:27, Fig. 27a). Further study indicated, however, that this piece is undoubtedly made of *Tivella* sp. Its use as a facing on the earspool found a short distance from the cremation, as suggested by Pritchard, is certainly supported by the data from Mer-130.

Shell earplug facings are not infrequent in central California, occurring in the Middle Period (Lillard, Heizer, and Fenenga 1939:55) and in at least one Late Phase I Period site, Yol-13 (Olsen and Riddell n.d.). Gifford (1947:73; Types KlaIV, KlbIII) shows two earplugs with applied facings, one of which is from a site near McKittrick.

Earplugs

Three complete and two fragmentary steatite ear (or lip) plugs were recovered from Mer-130. Tw distinct forms are represented. The first, a spo form, is a flat thick disk with concave sides (Fig. 14 d), and the second, a stemmed form, is small wit one expanded end and a distinct tapered stem (Fi 14e, f). The spool form is represented by one com plete and two fragmentary examples. The complet piece is concavo-convex in cross section with a slight ly grooved edge. The concave surface has bee gouged out and filled with asphaltum which bear the imprint of a perishable or shell facing. One of th two fragments also has scratching on one face whic probably was intended to hold mastic in place. Th last fragment has one well-polished concave side bu is otherwise not distinctive.

The stemmed examples are both lightly scratched on the face of the expanded end. Both are of such a small diameter that they suggest a different function than that of the larger spool form. They probably represent either earspools for children or conceivably adult-sized lip plugs (labrets).

Stemmed, spool, and intermediate forms of ear or lip plugs are relatively frequent in the Los Banos locality. Both forms occur at Mer-3 and Fre-129 (Pritchard 1970:16; Olsen and Payen 1968:54) and also at Mer-14 in an earlier context (Riddell and Olsen n.d.) (see distribution of earplug facings, above).

Conical Stone Pipe

A single fragmentary stone pipe was recovered, from the 60-75 cm level. It is split lengthwise and the bowl end is partially missing. The exterior is well finished and highly polished. The interior exhibits longitudinal gouge marks which partially obliterate drilling scars (Fig. 14a). The specimen is essentially similar in all respects to the pipes from Mer-3 (Pritchard 1970:15, Fig. 27k) and Mer-94 (Olsen and Payen 1969:11, Fig. 13a). They appear to be a late trait; their form indicates a southern derivation (King, Blackburn, and Chandonet 1968:51, 96).

Bipoint Stone Pin

A small nearly cylindrical section of slate, completely ground and pointed at both ends, is classed as a pin (Fig. 14i). Its depth (105-120 cm) and the presence of calcareous deposit suggest that it predates the late expression as known from the upper 60-75 cm of the deposit.

Shaped slate, actinolite, or limestone rods or pins are known from most sites in the Los Banos region. The better-fashioned examples occurred fairly deep

at Mer-94, suggesting that they are more typical of earlier periods (Olsen and Payen 1969:10, Fig. 12b). Shaped stone pieces, however, are known from all the protohistoric components (Pritchard 1970:15-16, Fig. 28; Olsen and Payen 1968:21, 53-54, Fig. 16b-d). They also occur in central California Early and Middle Horizon sites with some frequency (Lillard, Heizer, and Fenenga 1939; Heizer 1950).

Ground Slate Objects

Eight ground slate objects of less distinct form than the pin were recovered (Fig. 14j-n). Two of the pieces are simply convenient natural pencil-shaped sections of slate partially polished or ground. They probably represent unfinished examples. Three larger pieces include two fragments with oval cross sections and one flattened end. Both are completely ground. The third large piece is flat and pointed at both ends, with no wear or polish observable at either end. The remaining three fragments are smaller sections of pin-like pieces with a squarish or rectangular cross section. One has a rounded end. A second, which apparently had a pointed end, was recovered with the third fragment from a pit in sterile soil at the base of Unit C-1 (Fig. 2). The pit also contained a fragment of a mammal bone tube and a fragment of a spatulate bone, but no evidence of a burial.

The depth distribution suggests that many of the polished slate pieces, like the slate bipoint, predate the late material at the site, though they occur throughout the deposit.

Bead Blank (?)

A small conical steatite object is classed, for lack of a better term, as a bead blank (Fig. 14h). It has been completely shaped by grinding, but lacks polish. It appears small to have served even as a bead.

Calcite Nodules, Actinolite Fragments, Quartz Crystals, and Red Pigment

Several of the mineralogical specimens recovered at Mer-130 probably represent raw material for fabrication into specific artifact forms. This seems to be the function of the calcite nodules, since an earplug facing of this material was recovered. Possibly it is also the case for the actinolite splinters. Quartz crystals probably represent items used in the natural state, although crystal artifacts are known in California. The pigment lumps were raw material for production of powdered paint; at least one lump exhibits grinding as evidence of paint manufacture.

Large Ground and Pecked Stone Artifacts

As is typical of sites in the Los Banos region, large stone tools are frequent (Tables 13, 14). For the most part they consist of food preparation implements including both the mortaring and milling complexes. These tools are of particular importance at Mer-130, since the site appears to represent a pestle fabrication center. It is possible to describe in some detail the production stages of pestle manufacture as evidenced here. Material utilized in all classes is definitely local, with little doubt that it derived from the on-site sandstone quarry source or the stream at the foot of the north edge of the site.

Conical or Cylindrical Pestles

Nine whole or fragmentary completely shaped pestles occurred, eight of sandstone, one of andesite. One each was included with Burials 5 and 6. Seven are conical in outline; two fragments are essentially cylindrical with straight sides (Figs. 15, 16b, 17c). All have been carefully pecked to form, and several exhibit considerable polish on the sides. The used end or ends are gently rounded with a distinct shoulder on several examples. This suggests use on shallow bedrock and slab mortars, rather than in deep bowl mortars. Although the pestle associated with Burial 5 was accompanied by two slab mortars, however, the pestle found with Burial 6 was accompanied by a bowl mortar, and shows amount and type of wear indicating use with this mortar.

The depth distribution of the pestles (Table 14) suggests that they are part of the late complex at the site. None, at any rate, occurred in the deepest levels.

Cobble Pestles

Thirteen cobble pestles, those with unshaped sides, were recovered. Twelve are of sandstone, one of andesite. Five have rounded worn ends; one is a medial fragment with slightly pecked edges, and the remainder exhibit somewhat blunted or slightly battered ends (Fig. 16a, c, d). A few of them show slight pecking to blunt off a sharp-angled edge, but the basic outline is unmodified. Possibly these specimens represent unfinished pestles discarded prior to dressing of the sides. The lack of wear suggests that these tools may have been used primarily with the bedrock mortar areas associated with the site. Most of the holes were shallow, so that wear would not occur along the sides of the pestle.

The depth range for the cobble pestles (Table 14) is essentially identical to that of the shaped pestles. They are clearly late for the most part, as nine of

thirteen occur above 60 cm in the deposit.

Unfinished Pestles, Pestle Blanks, and Pestle Manufacture Waste

These artifacts, all of sandstone, include a variety of specimens resulting from, and providing evidence for, the existence of a pestle industry at the site. Along with the finished pestles described above, it is clear that the complete range of forms from blank to finished dressed pestles occurs at the site (Fig. 17a, b).

The pestle blanks consist of elongate sections of sandstone quarried from the outcrop at the west edge of the site. The horizontal bedding planes in this outcrop provided a natural striking platform for removal of the blanks.

The blank was roughly shaped by percussion until it was subcircular in cross section. At this point one or both ends were modified by girdling and snapping off of the irregular portions. On some specimens, the flattish striking platform became the proximal end of the pestle. The final shaping was completed by pecking and abrasion of the sides. Wear from use in a bowl mortar would further modify the ends and portions of the shaft. Examples recovered of unfinished pestles utilized prior to final dressing range from rather rough cobble-like forms to pieces that are extensively pecked but not polished.

The distribution of the unfinished and reject end fragments in the midden (Table 14) indicates that the pestle industry essentially dates late in the site's history. No blanks were recovered from the midden proper, but blanks, unfinished specimens, and one broken finished example were recovered from the refuse dump along the north side of the site (Fig. 2). This area contained innumerable fragments of quarried material and large broken fragments, along with reject pestles in all stages of fabrication.

Bowl Mortars

The three bowl mortars recovered include a fragment from the dump area and two from the midden. The two larger examples are both over 26 cm in width on the short axis; the smaller is oval, measuring 20 by 17.5 cm (Fig. 18a-b). All are made from globular cobbles, two of rhyolite and one of andesite, which were externally shaped to some degree by pecking. The interiors are variants of a U-shaped outline and all exhibit use wear. The rims are unmodified other than as a result of use.

The largest example was associated with Burial 6 (see Conical or Cylindrical Pestles, above); t smallest, from the midden, lacks association with f tures or burials.

Bowl mortars and various pestle forms occur in excavated sites so far reported in the area. Lar bowl mortars and cylindrical or conical shaped pe tles presumably occur throughout the span of occ pation as it is now known (Pritchard 1970:9-12; Olse and Payen 1968:22-23, 51-52; 1969:28, 30-31), althoug there are indications of size and frequency chang through time.

Slab Mortars

Three large, heavy, sandstone slab mortars wer recovered, two associated with Burial 5 (see Conica or Cylindrical Pestles, above) and one from the mid den (Fig. 19). The two with Burial 5 were included in the burial cairn, and thus presumably represent an artifact form contemporaneous with the burial.

The slabs are unmodified along the edges, but show some smoothing or grinding on the area surrounding the mortar pit. The pits are shallow (11 mm and 40 mm deep) and broad without a distinct rim. The base of the pit in two instances is rough, suggesting that the mortars were used as pounding basins. One example with Burial 5 had the mortar pit broken through as a result of a sharp blow. Conceivably, this resulted from purposeful breakage at the time of interment.

Slab mortars are frequent in the region only at Mer-94, although most of the specimens here appear to have been used as grinding rather than pounding basins (Olsen and Payen 1969:27, Fig. 35a, b). They also, on the basis of context, appear to predate the assemblage at Mer-130. Examples are also known from Mer-3 in a prehistoric context (Pritchard 1970:-10).

A slab and a boulder mortar with a shallow pit were recovered from Fre-128 (Olsen and Payen 1968:22-23, Figs. 20, 22b), suggesting that these shallow pitted slab or boulder mortars were retained into the protohistoric or early historic period.

Hopper mortars, of both slab and boulder forms, are noted as common in the Monterey region and to the south, especially in San Luis Obispo and Santa Barbara Counties, although no temporal data are presented (Pilling 1955:74).

Manos

Twenty-one manos, 19 of sandstone, one of ande-

site, and one of micaceous schist, were recovered from Mer-130. On the basis of outline and extent of wear, at least five forms are distinguished.

Rectangular bifacial manos are represented by three specimens (Fig. 20c, e). All are well worn and nicely fashioned. Two are from 0-15 cm; the last is from the midden without association. Oval bifaces had three occurrences, two from the surface and one from fairly deep in the deposit (Fig. 20b). The plano-convex manos are similar in outline to the oval specimens, but differ in cross section (Fig. 20d). All of these occurred in the deposit from 30 to 90 cm. Shaped biface mano fragments, either of the rectangular or oval forms, occurred from 15 to 105 cm, with no frequency at a specific level.

Cobble bifaces are the most frequent form. All seven examples occurred above 60 cm. They appear to be distinctive of the late period at the site. The single uniface cobble mano was in the same depth range (Fig. 20a).

It seems apparent that the shaped mano preceded the cobble mano in time, and that bifaces are dominant in the site. This general trend is also evidenced by the sample from other sites in the region (Olsen and Payen 1969:33).

Slab Milling Stones

Only four milling stones, all of sandstone, were recovered from Mer-130, and two of these are fragments. None have shaped edges, but all exhibit some roughening of the surface as a result of pecking. Two show wear on both faces.

The size and weight of the complete example suggests that these slabs were obtained not far from the site. The material is locally available in the form of exfoliated slabs.

The depth distribution is curious in the light of data from other sites. The deepest example may support the existence of an earlier component, while the shallow pieces could indicate some use of milling stone complex into the late period. This is supported by the data from the Little Panoche area (Olsen and Payen 1968:24, 52-53).

Small Grinding Slab

A small, flattish sandstone cobble with slight grinding or polish apparently represents a milling stone or smoothing slab. The limited degree of wear suggests the latter function. The edges are unshaped, and it is clear that the slab was used sporadically rather than habitually. Similar slabs were recovered from Little Panoche, also in a late context (Olsen and Payen 1968:24, 52-53, Fig. 25b - d).

Pitted Cobbles

Two small irregular cobbles have pecked conical pits on one face (Figs. 17g, 20f). The pits measure 21 mm and 41 mm in diameter, by 2 mm and 17 mm in depth. These pieces conform to the acorn anvils described by Barrett and Gifford (1933:43) for the Miwok, in that they are simply a cobble with a small pecked cupping.

Cobble Hammerstones

Five globular cobbles of meta-sandstone or schist exhibit battering on the ends or edges (Fig. 17d, e, f). Several have small polished or ground areas, but grinding seems secondary to their use as battering tools. They may have served in the fabrication of other stone implements, but their small size makes this function unlikely. The scarcity of large tools for manufacturing is strange in light of the evidence for a pestle fabrication industry at the site. The abundance of rock in the deposit, much of which was not intensively inspected for signs of utilization, may explain this apparent lack.

One hammerstone was recovered from the dump area; the remainder are from 30 to 90 cm in the deposit. The greatest frequency, from 30 to 60 cm, reflects a late, but not terminal, emphasis on these tools.

HUMAN REMAINS

A total of nine primary burials was recorded and evidence of one scattered cremation was noted at the time of excavation and during sorting of the faunal remains (Table 15, Fig. 21). The presence of burnt artifactual material suggests that the cremation or cremations may originally have had associated grave goods.

Although the burials are somewhat scattered, both horizontally and vertically (Fig. 2), there is no reason to believe they represent more than one cultural unit. Presumably, the depth differences reflect depth of bedrock and the likelihood that interments occurred over a long enough span of time to allow some midden deposition. In actuality, this latter point is pertinent only if we assume that the preferred grave pit depth was something under 100 cm.

The data from Fre-129 in the Little Panoche area indicate that grave pits range in depth from ca. 30 cm to somewhat over 100 cm (Olsen and Payen 1968: Table 37). At Fre-129, it is clear that the grave pits originated close to, if not from, the present surface. The similarity in burial depth at Mer-130 and Fre-128 indicates that the burials at both sites date from the period of greatest use of the site. Thus, it is our contention that the burials at Mer-130 date from the upper occupation zone (surface to ca. 45-60 cm), where the bulk of the artifactual material was recovered.

Burial position, where determinable, is consistently flexure, but detailed observations were not possible due to disturbance. The better-preserved burials indicate that the legs were drawn up rather tightly, although not directly on the chest area. The arms were bent either between the chest and legs or over the legs. No definite semiflexed burials or other variations occurred.

Orientation was variable, but seemingly a northerly or westerly direction was favored. Direction could be determined for only seven burials, a sample which is too small to allow valid conclusions.

Age data as presented are based on field observations. Sexing of the remains has not been attempted, both because of the poor condition of the bone, and also due to the small sample size.

The burial associations include large stone artifacts used in the cairns and smaller objects buried in conjunction with the body. The cairns usually consisted of large irregular sandstone slabs or cobbles. Included among these were, as noted above, two heavy slab mortars with Burial 5 and a bowl mortar with Burial 6. Four interments, including Burials 5 and 6, had cairns over or partly over the remains.

It is notable that few objects were directly associated with individual burials (Table 15). Presumably, this reflects the practice of placing grave goods in the pit during its filling rather than with the body. Since we could not define grave pits within the midden, these artifacts were simply lumped with objects lost or rejected by the site inhabitants.

The burials from Mer-130 are similar in position and temporal span of artifacts to those of the cemetery at Fre-129 (Olsen and Payen 1968: Table 37). They thus date to the late prehistoric Panoche Complex, as outlined in a preliminary statement on the culture sequence in the San Luis-Little Panoche area (Olsen and Payen 1969:39, Temporal Chart). The cremations from Mer-3 apparently date to the same period, although the artifact inventory is somewhat different. The occurrence of numerous cremations is at variance with the other late period sites, suggesting that Mer-3 represents something other than a mere habitation site (Pritchard 1970).

FEATURES

Nine features were recorded at Mer-130, including bedrock mortar pits and cupules on the two major rock outcrops located on the site (Table 16, Fig. 2). One other feature (Feature 4), noted on the surface, consisted of a cobble cairn in the area of Units B4/5.

Features 1 and 2 (Units C1 and E1) were small rock-lined hearths filled with gray ash (Fig. 22b). Both were basin-shaped in cross section and oval or circular in outline. Their shallow depth indicates that they derive from the late occupation.

Feature 3 was a rock slab pavement in Units C2 and 3 (Figs. 2, 22c). It was made of flat slabs of sandstone closely fitted together. The feature indicates a definite living or activity area although no evidence of a structure over the pavement or adjacent to it was noted. The depth indicates a late date for the feature, although it clearly predates Burial 7, which was at the same level but intruded through the pavement. No comparable features are known from the San Luis-Little Panoche region, probably because sites closer to the valley floor lack abundant stone.

Feature 4 was a cobble or boulder cairn on the surface of the site in the area of Units B4/5 (Fig. 22a). The cairn was recorded and cleared, and the area beneath was excavated. Some ash was noted beneath the cairn to a depth of ca. 30 cm, but not in a definable concentration. Presumably, the cairn represents an aboriginal feature; no historic material was associated.

Feature 5 was a large cairn consisting of unmodified cobbles, slab mortars, and a slab milling stone. It was associated with Burials 4 and 5 (Fig. 21a) (see Large Ground and Pecked Stone Artifacts, above).

Feature 6 consisted of a slab-covered depression into the sterile base soil in Unit A1. The pit was devoid of cultural material which might have suggested its possible function. Conceivably, it represented a cache pit.

Feature 7 was almost identical to Feature 6, in that it was a pit into sterile soil covered with unmodified slabs of sandstone. It may have been associated with a badly disturbed burial (No. 8) but this could not be clearly established.

Feature 8 was the designation assigned to the bedrock mortars and the groove and cupules located on Outcrop 1. The bedrock mortars on Outcrop 2 are Feature 9 (Table 17, Fig. 23).

For the most part, the bedrock mortar pits are shallow (Table 17), suggesting that they were of secondary importance to the site inhabitants. The frequency of other food preparation implements suggests a valley rather than foothill orientation. Other bedrock mortar sites within the region show a similar pattern. Few sites have more than ten bedrock mortar pits, and these few also produce abundant portable milling implements.

Cupules occur frequently throughout California, and are known from a number of sites in the Los Banos region. They are reported from Mer-3 and Mer-119 (Pritchard 1970: 43-44, Plate 4c, and this volume), and occur at Mer-15 in association with bedrock mortar pits. In this region all appear to date to the late protohistoric occupation.

MIDDEN CONSTITUENTS

Faunal Remains

Within the limitations imposed by the predominant use of 1/4-in screen, all recognizable faunal remains were retained in the field. For the most part these consist of large mammal long bone splinters, presumably attributable to deer, antelope, or other large mammals (Tables 18, 19).

Five units were chosen for faunal analysis, all of which are of sufficient depth to provide a cross section of the occupation at the site. The units include C1, C3, D2, D3, and D4, all clustered in the central portion of the site (Fig. 2). All of the selected units were at least 120 cm deep, and one reached a depth of 180 cm.

The distribution of mammal bone indicates that the greatest frequency was in the upper 60 cm of the deposit, following the distribution of the midden artifacts.

For the most part, the faunal assemblage suggests that large mammals (deer and antelope) made up a goodly proportion of the diet of the site's occupants. The remainder of the assemblage consists almost wholly of small mammals. Below 105 cm the proportion of large vs. small mammal remains changes somewhat, suggesting that small mammals were of more importance during the postulated earlier occupation at the site.

The identified faunal material (Table 19) is of interest in that it indicates that few medium-sized mammals were taken. The bulk of such remains are of *Canis* sp. and could represent either dog or coyote. The paucity of elk bone, along with a scarcity of shell, is clearly indicative of a foothill adaptation. Preliminary sorting of a sample of faunal material from Fre-128 (Little Panoche area) in an environment dissimilar to that of Mer-130, indicates a much greater reliance on small mammals and fish.

Few shellfish remains were recovered from the site (Table 20), undoubtedly as a result of nonavailability within a reasonable distance of the San Luis area. Much the same situation was noted in the Little Panoche area (Olsen and Payen 1968) and at Mer-94 (Olsen and Payen 1969), a short distance east of Mer-130. The small size of the sample suggests that the few shellfish recovered originated in the small stream or marsh fairly close to the site area. Clearly, the shellfish resources were limited, however.

Lithic Debris

The chipping debris was tabulated from five units (for convenience, the same units utilized for the faunal material). The preferred material was silicate, almost to the exclusion of other material (Table 21). Quartz or quartzite and obsidian occur in small quantities, although they exhibit slight differences in frequency on the basis of depth. For the most part the obsidian chippage consists of small retouch flakes, probably resulting from the reworking of broken specimens. It is clear that no raw obsidian was worked into finished form at the site.

Waste material from fabrication of large stone tools could not be identified inasmuch as it was not possible to differentiate it from the locally derived cooking stone fragments in the midden.

The depth distribution of the chippage (Table 21) is in accord with the faunal material in that it increases drastically in the upper levels of the deposit, as do the chipped stone tools. Most of these tools are found in the same levels where a high incidence of chipping debris is noted.

CONCLUSIONS

Although the Mer-130 excavations were limited, it is evident that the affinities of the site are quite clearly with the cultural expression termed the Panoche Complex (Olsen and Payen 1969), which has been dated to the late protohistoric and early historic period in the San Luis-Little Panoche region.

Diagnostic elements attributed to this period at Mer-130 include only a portion of the total elements attributed to the complex, but additional items lacking at previously excavated sites can now be added to the cultural inventory for the period.

The shell beads from the site include small, medium, and large spire-lopped, appliqué, and thin-lipped *Olivella* beads. Only the latter two forms are limited to the Panoche Complex. Distinctive ornament forms include the tabbed end (Type M2dII) and oval or rounded rectangular forms. All are known from other late sites. The *Haliotis* disk bead, with the epidermis removed, is also known from other sites, but is infrequent.

The polished stone inventory includes a steatite disk bead, steatite earspools, a calcite earplug facing, and a variety of ground slate objects. Manufacture of calcite objects is indicated by the recovery of several nodules of this material.

Bone objects include awls, scapula saws, a fish spear (?) fragment, bird bone tubes and beads, and examples of incised bone artifacts.

The typical chipped stone artifacts include the diagnostic Panoche side-notched form and small triangular points, usually made of silicate. The use of large spear points or knives is suggested, but they could predate this period at Mer-130. The abundance of flake scrapers and knives is typical for the period. The frequent occurrence of piercing tools or drills may reflect a local orientation not noted previously.

Ground or pecked stone tools were more frequent at Mer-130 than at the other excavated Panoche Complex sites or components. This is especially true in the case of pestles, some of which were manufactured at the site. We suspect that they were made for export specifically to groups living on the stoneless alluvial plain adjacent to the San Joaquin River.

The occurrence of pestles along with abundant manos is somewhat at variance with data from other sites. Both forms of food processing are known from other Panoche Complex sites, however. Slab mortars and bowl mortars are also known from other sites.

The burial pattern clearly relates to the Little Panoche area where only primary flexed burials occurred (Olsen and Payen 1968), in contrast to the late cremation pattern evidenced at Mer-3. This indicates that two patterns were in use during the Panoche Complex period. Further analysis of these patterns may indicate the causal factors involved.

Although it is apparent that Mer-130 may be placed in the already defined Panoche Complex, also clear that the adaptation at this site is to an o woodland environment rather than to a treeless midesert area such as Little Panoche. We assume, a hypothesis, that this site represents seasonal or s cial purpose occupation by the same group or grou who lived further east along the west side of the S Joaquin River. These people adapted to very loc ized environmental niches for the purpose of explo ing the complete resource range of the west si region between the San Joaquin River and the cr of the Diablo Range.

Further work on the material from all the sites e far excavated in this region should reveal some of th various adaptational patterns to this cross sectio consisting of marsh or riverine environments, dr plains, and oak-woodland foothills. Specifically, anal ysis of the faunal remains should answer some o these questions.

TABLE 1
Olivella Shell Beads from Mer-130

New Type	Old Type	Provenience Midden	Provenience Burial	Total	Measurements (mm) Length	Measurements (mm) Width	Measurements (mm) Thickness	Measurements (mm) Diameter	Notes
A1a	(1a)	22	7	29				5.0- 6.9	22 broken spires 7 ground spires
A1b	(1b)	107	104	211				7.0- 9.9	134 broken spires 75 ground spires 1 burnt
A1c	(1b)	7	6	13				10.0-11.0	10 broken spires 3 ground spires
B2a	(1a)	4	4	8				6.0- 6.9	
B2b	(1b)	26	4	30				7.0- 8.5	
A5 or O1	Appliqué	2		2	12+-16.0	9.0-10.0	6-7		1 broken 1 has trace of asphaltum in interior
C8	Amorphous or rough disk	3	6	9	8.0-10.0	7.5- 9.0			Probably unfinished local beads or variant of Type E-1 beads
E-1 E-2	(3a1)	22	7	29	8.0-10.5	7.0- 9.5			4 lack lip and are flattish in cross section
M1a	(2a1)	1	___	1	8.0	7.0			Centered conical perforation
	TOTALS	194	138	332					

TABLE 2
Depth Distribution of Olivella Beads at Mer-130

Depth (cm)	Type	A1a	A1b	A1c	B2a	B2b	A5	C8	E-1 E-2	Variant E-2	M1a	Totals by Level
0-15		1	2			1						4
15-30		2	5			1	1		1			10
30-45		4	9			1			2			16
45-60			6	1		4	1		2	(1)		14
60-75		4	9		2	2			4	(1)		22
75-90			15			2		2	3			22
90-105		2	16	2		3						23
105-120		3	17	1	1	3			1	(1)		26
120-135		4	23	1		7		1	7	(1)		43
135-150			4	1		1			1			7
150-165		2	1	1	1				1			6
165-180						1						1
TOTALS		22	107	7	4	26	2	3	22	(4)	1	194
Burial 4			1									1
Burial 5		5	35	4	4	2			5			55
Burial 6		2	68	2		2		6	2			82
GRAND TOTALS		29	211	13	8	30	2	9	29		1	332

TABLE 3
Haliotis Shell Ornaments and Beads from Mer-130

Ornament Type	Specimens	Measurements (mm) Length	Width	Perforation	Material
Oval	1	67	37	2	*Haliotis* sp. (background)
MB1	1	21	10	2	*Haliotis* sp. (background)
MB(1)1(?)	1	12+	10	2	*Haliotis* sp. (background)
M2dII fragments	3	--	28+	--	*Haliotis* sp. = 2 (background) *Haliotis rufescens* = 1
Perforated fragments	2	23+-25+	17+-21+	3	*Haliotis* sp. (background)
Pendant (?) fragment	1	32+	21+	--	*Haliotis* sp. (background)
Subtriangular	1	27	14		*Haliotis* sp. (rim) (background)
Incised fragments	4	--	--	--	*Haliotis* sp. (disk ornaments?)
Unidentified fragments	34	--	--	--	*Haliotis rufescens* = 4 *Haliotis cracherodii* = 1 Unidentified = 29
Disk bead	1	11 (Dia.)			*Haliotis* sp. (back split off)
TOTAL	49				

TABLE 4
Depth Distribution of Haliotis Shell Ornaments and Beads at Mer-130

Depth (cm)	Oval	MB1	MB(1)1(?)	M2dII	Perforated Fragments	Pendant Fragment	Subtriangular (Rim)	Incised Fragments	Unidentified Fragments	Disk Bead	Totals by Level
0-15				1					2		3
15-30					1			1	6	1	9
30-45							1	2	8		11
45-60				1	1			1	8		11
60-75				1					4		5
75-90									1		1
90-105						1					1
105-120											
120-135									3		3
135-150									2		2
150-165											
Burial 5			1								1
Burial 6	1	1									2
TOTALS	1	1	1	3	2	1	1	4	34	1	49

TABLE 5
Bone and Antler Artifacts from Mer-130

Artifact Type	Specimens	Measurements (mm) Length	Width	Thickness	Material and Notes
Metapodial awls	3	126 (1)	17-24(Base	10-13(Base)	Split metapodial, proximal end used
Splinter awls	2	78-103	12-13(Base)	5-6(Base	Splinter, large mammal
Awl fragments	14	27+-57+	6-13(Shaft)	4-5(Shaft)	Large mammal
Scapula saws	6	78+-172+	32+-43+	10+-17+	Deer or antelope, all fragments
Spatula fragment	1	27+	7	2	Split rib(?)
Bone pin	1	45+	7	5	Large mammal bone
Fish spear(?)	1	--	--	5	Split antler(?) (burnt)
Antler flakers	2	--	--	--	Tip fragments, abraded or cut
Mammal bone tubes	3	32+-71	10-14(Dia.)		Large mammal (one burnt)
Bird bone tubes	18	113-115(2)	5-10(Dia.)		Bird bone
Incised tubes	2	19+	6(Dia.)		Bird bone
Bone beads	5	19-37+	3-5(Dia.)		Bird, rodent, and rabbit bone
Bird bone whistle	1	95+	10	8	Large bird bone
Incised whistle	1	85	10	9	Large bird bone
Polished and cut fragments	14	--	--	--	12 polished fragments, 2 cut-off ends
TOTAL	64				

Artifact Type	0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	150-165	Burial No. 1	Burial No. 4	Burial No. 5	Totals
Metapodial awls					2								1		3
Splinter awls	1							1							2
Awl fragments		1	5	5	1					1				1	14
Scapula saw fragments		2	1	1	1					(1)*	1				6
Spatula fragment								1							1
Bone pin							1								1
Fish spear				1											1
Antler flakers		2													2
Mammal bone tubes							1		1		1				3
Bird bone tubes	3*	1	2	2											8
Incised tubes			1	1											2
Bone beads	2		2	1											5
Bird bone whistle								1							1
Incised whistle			1												1
Polished and cut fragments	2	2	5	1	1		1	1						1	14
TOTALS BY LEVEL	8	8	17	12	5		3	4	1	1	2		1	2	64

*Possibly 2 from 0-15 cm level with Burial No. 1

(1)*Fragment fitted to specimen from 150-165 cm level

TABLE 7
Projectile Points from Mer-130

Point Type	Specimens	Measurements (mm) Length	Width	Thickness	Weight	Material
Triangular 1	7	20-31	13-18	3-4	.6-.9(.8)	O=1, Ch=3, Cl=3
Triangular 2	20	22-32	14-23	3-6	.8-3.2(1.6)	Ch=8, Cl=12
Triangular 3	3	24	13-16	5-6	.9-1.4(1.1)	Cl=3
Panoche side-notched 1	90	15-29+	10-21	2-5	.4-1.4(.8)	O=3, Ch=44, Cl=43
Panoche side-notched 2	7	25-26	13-15	3-4	.6-.9(.8)	Ch=4, Cl=3
Large leaf	1	39	16	8	4.8	O=1
Large corner-notched	1	47	24	9	9.0	Cl=1
Large side-notched	1	30	20	8	4.7	Ch=1
Large tapered base	1	74	35	10	21.5	Ch=1
Large wide base	1	45+	24	11	12.2+	O=1
Small point fragments	45	18-25+	11-15	2-5	2.0	O=3, Ch=26, Cl=15
Large point fragments	26	24+-37+	15-29+	5-11	ca. 4-5+	O=7, Ch=12, Cl=7
TOTAL	203					

O - obsidian, B - basalt and andesite, Ch. - chert, Cl. - chalcedony

Weight in grams; ( ) = average weight

TABLE 8
Depth Distribution of Projectile Points at Mer-130

Point Type	Surface	0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	150-165	Burial No. 6	Totals
		Depth (cm)												
Triangular 1			4	1			1		1					7
Triangular 2	1	4	5	6	3				1					20
Triangular 3		1	1		1									3
Panoche side-notched 1	1	15	27	19	11	4	7	1	1	1	1	1	1	90
Panoche side-notched 2		1	1	1	1	1				1	1			7
Large leaf					1									1
Large corner-notched			1											1
Large side-notched						1								1
Large tapered base							1							1
Large wide base						1								1
Small point fragments		8	16	7	2	4	4		1	1		1	1	45
Large point fragments	1	6	6	1	1		2	1	2	3	1	2		26
TOTALS BY LEVEL	3	35	61	35	20	11	15	2	6	6	3	4	2	203

TABLE 9
Chipped Stone Artifacts (Excluding Projectile Points)
from Mer-130

Artifact Type	Specimens	Measurements (mm) Length	Width	Thickness	Material
Ovate knives	3	25-34+	16-24	7-8	O=2, Ch=1
Biface flake knives	20	16-57	13-37	3-18	Cl=13, Ch=5, O=1, S=1
Biface blanks	2	36	15-24	11-14	Ch=1, Cl=1
Flake drills	6	22-35	13-20	5-7	Cl=4, Ch=1, O=1
Drill fragments	3	--	11-12	3-7	Ch=1, Cl=1, O=1
Pointed flake gravers	3	15+-26	12-30	4-9	O=2, Cl=1
Gouges	5	24-55	9-27	7-10	Cl=3, Ch=2
Prismatic blade scrapers	3	58-64	16-26	4-9	Ch=2, Cl=1
Flake scrapers	72	16-77	10-49	3-13	Cl=55, Ch=14, J=1, G=1
Steep scrapers	47	18-75	12-37	7-19	Cl=42, Ch=4, Q=1
Core scrapers	9	30-54	25-44	21-40	Cl=7, Ch=1, Q=1
Unused cores	6	42-120	28-96	24-37	Cl=3, Q=2, Ch=1
TOTAL	179				

O - obsidian; Ch - chert; Cl - chalcedony; Q - quartz; Qe - quartzite; J - jasper; S - slate; G- glass

TABLE 10
Depth Distribution of Chipped Stone Artifacts
(Excluding Projectile Points) at Mer-130

Artifact Type	Surface	0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	150-165	Burial No. 5	Burial No. 9	Total
					Depth (cm)										
Ovate knives					1			1	1						3
Biface flake knives	2	4	3	5	1	2	1		1			1			20
Biface blanks			1		1										2
Flake drills		1	3			1	1								6
Drill fragments				1	1					1					3
Pointed flake gravers				1			1	1							3
Gouges			4			1									5
Prismatic blade scrapers		1	1					1							3
Flake scrapers		13	21	14	10	6	1	3	1		1	1		1	72
Steep scrapers	1	8	11	10	4	2	4	2	1	2	1		1		47
Core scrapers	1			2	2	1		2			1				9
Unused cores	1			3						1				1	6
TOTALS BY LEVEL	5	27	44	36	20	13	8	10	4	4	3	2	1	2	179

TABLE 11
Polished and Miscellaneous Stone Artifacts
from Mer-130

Artifact Type	Specimens	Measurements (mm) Length	Width or Diameter	Thickness	Material and Notes
Disk beads	2		7.5	1-3	Slate and steatite
Rectangular bead	1	16	12.5	4.5	Serpentine - biconically perforated
Earplug facing	1	24	21	5	Calcite - incised edge
Spool earplugs	3		25-29	14-17	Steatite - asphaltum on 1 specimen
Stemmed earplugs	2		10-11	8-14.5	Steatite
Conical pipe	1	76+	31+		Steatite
Bipoint pin	1	51	5	4	Slate
Ground slate objects	8	36-71	5-11.5	3-7	Slate
Bead blank (?)	1	14	5		Steatite
Red pigment	3	8-11	8-14	5-6	Hematite(?)
Quartz crystals	9	17-29	7-16	5-12	Clear quartz, whole and flakes
Actinolite splinters	2	15-26	6-7	2-3	--
Calcite nodules	2	30	20-25	10-16	--
TOTAL	36				

TABLE 12
Depth Distribution of Polished and Miscellaneous Stone Artifacts at Mer-130

Artifact Type	Depth (cm) 0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	150-165	Burial No. 6	Totals
Disk beads	1			1			1						2
Rectangular bead			1			1		1				1	1
Earplug facing			1		1								1
Spool earplugs									1				3
Stemmed earplugs					1								2
Conical pipe					1			1	2				1
Bipoint pin		1		1	1	1	1	1					8
Ground slate objects				1							1		1
Bead blank(?)				2		3	1	1		1			9
Red pigment				1									2
Quartz crystals	1	1	1	2		3							2
Actinolite splinters			1	1									36
Calcite nodules		1		1									
TOTALS BY LEVEL	2	3	4	7	3	5	3	4	2	1	1	1	

TABLE 13
Ground Stone Artifacts from Mer-130

Artifact Type	Specimens	Measurements (cm) Length	Width or Diameter	Thickness	Material
Pestles					
Conical (finished)	9	16.5-28.8	5.7-7.1		Sandstone = 8, andesite = 1
Cobble (finished)	13	14.2-24.8	5.0-8.2	3.7-6.1	Sandstone = 12, andesite = 1
Unfinished	8	15.5-46.0	3.9-8.9	3.9-7.5	Sandstone = 8
Blank	4	22.0+-38.0	9.7-12.0	7.5-10.9	Sandstone = 4
Cut-off ends	2	6.5-8.6	5.6-6.1	5.0-5.6	Sandstone = 2
Bowl mortars	3	20.0-30.5	17.5-26.0	11.5-19.0	Rhyolite = 2, andesite = 1
Slab mortars	3	39.0-53.0	28.0-44.0	5.7-12.0	Sandstone = 3
Manos					
Rectangular biface	3	10.9-13.8	8.6-9.6	3.2-4.1	Sandstone = 3
Oval biface	3	10.5-11.3	8.0-9.5	4.6-6.8	Sandstone = 2
Biface fragments	4	---	---	4.1-5.3	Sandstone = 4
Plano-convex	3	9.1	8.6	3.3-4.7	Sandstone = 2, andesite = 1
Biface cobble	7	9.9-14.0	8.3-13.0	3.3-4.8	Sandstone = 6, micaceous schist = 1
Uniface cobble	1	9.8	8.7	5.1	Sandstone = 1
Slab milling stones	4	38.7-43.0	24.0-28.5	4.0-6.3	Sandstone = 4
Small grinding slab	1	14.0	10.5	3.5	Sandstone = 1
Pitted cobbles	2	7.2-12.5	7.1-8.8	3.4-3.8	Sandstone = 2
Hammerstones	5	6.9-10.3+	5.8-9.5+	5.3-6.3	Sandstone = 4, serpentine = 1
TOTAL	75				

TABLE 14
Depth Distribution of Ground Stone Artifacts at Mer-130

Artifact Type	Surface	Depth (cm) 0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	Burial No. 4	Burial No. 5	Burial No. 6	Totals
Pestles															
Conical	1		1	1	2	1	2	1							9
Cobble	1		2	2	4	1	2	1							13
Unfinished	1	1	1	4								1			8
Blank	4														4
Cut-off ends					2										2
Bowl mortars	1			1										1	3
Slab mortars		1											2		3
Manos															
Rectangular biface		2				1									3
Oval biface	2						1		1						3
Biface fragments			1		1	1		1							4
Plano-convex				1		1	1								3
Biface cobble		1	1	3	2										7
Uniface cobble					1										1
Slab milling stones		1	2							1					4
Small grinding slab			1												1
Pitted cobbles			1	1											2
Hammerstones	1			2	1		1								

TABLE 15
Burial Data for Mer-130

Burial	Depth (cm)	Position	Orientation	Age	Cairn	Associated Objects
1	10	Flexed, back	North	Adult	None	Bone tubes (?)
2	65	Flexed, (?)	South-west	Infant	Large cobble	None
3	50	Flexed, (?)	North	Child	None	None
4	103	On back, legs missing	North-east	Adult	Large cobble	Olivella bead, awl, pestle blank
5	104	Flexed, (?)	West	Adult	Large cobble	Olivella bead, shell ornament, cut bone fragment, scraper, pestle, slab mortars
6	67-104	Flexed, (?)	Indeterminable	Adult	Large cobble	Olivella beads, shell ornament, projectile point and fragment, stone ornament, pestle, and bowl mortar
7	60	Flexed, right side	South-east	Adult	Feature 3 associated (?)	None
8	130	Indeterminable	Indeterminable	Indeterminable	None	None
9	150	Flexed, right side	West(?)	Adult	Well below Feature 3	Scraper, core
10*	---	Cremation	---	Adult(?)	---	---

*Calcined human bone scattered throughout several units noted during faunal analysis.

TABLE 16
Features Recorded at Mer-130

Feature	Unit	Depth	Horizontal Dimensions	Description	Notes
1	C-1	20-25	40 x 40	Ash lens with rocks	Hearth or rubbish pit
2	E-1	18-23	90 x 65	Ash lens with rocks	Hearth or rubbish pit
3	C-2+3	40-60	400+ x 120 to 60	Cobble pavement. Compact ash or hard surface also noted	Predates Burial 7
4	B-4+5	Surface	180 x 160	Cobble cairn on surface ash noted below cobbles in midden, ca. 10-30 cm	Function unknown
5	D-3+4	25-95	175 x 145	Cobble cairn includes slab mortars and metate	Cairn over Burials 4 and 5
6	A-1	30	ca. 120 dia.	Depression with 3 large slabs	Very shallow pit. No ash or charcoal
7	B-4+5	110-135	120 x 60	Depression into base covered with 5 large slabs	Possibly associated with Burial 8
8	---	---		Bedrock mortar pits and cupules on Rock Outcrop 1	
9	---	---		Bedrock mortar pits on Rock Outcrop 2	

Depth and dimensions in centimeters

TABLE 17
Bedrock Mortar Pits and Cupules at Mer-130

Bedrock Mortars	Diameter	Depth
Outcrop 1	8	1.5
	8.5	2.0
	9	2.5
	10	2.0
	12	12.0
Outcrop 2	9	3.5
	12	2.0
	14	3.5

Cupules (Outcrop 1)

Diameter	1.0	1.5	2.0	2.5	3.0
2.0	5	2	1	2	
2.5	2	3		2	
3.0	4	1	3.5	2	
4.0		1	1	1	
4.5				1	
5.0		1	1	1	
5.5				1	
6.0				1	

Groove (Outcrop 1)

4 x 10	1

Diameter and depth in centimeters

TABLE 18
Faunal Remains at Mer-130

Faunal Remains	Depth (cm) 0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	150-165	165-180	Totals by Leve
Large mammal	113	329	228	299	179	144	75	112 (87)*	78	11	3	2	1,573
Medium mammal	10	31	28	22	25	20	12	19 (16)*	7	2	2		159
Small mammal	10	38	60	74	48	63	39	86 (74)*	64	9	7	2	500
Bird		1	8	6	2		2						19
Fish			1		1	2		1					5
TOTALS	133	399	324	401	254	227	128	217 (177)*	149	22	12	4	2,230
Units in level	5	5	5	5	5	5	5	5	4	2	2	1	

*Total remains less those from fill in area of Burials 4 and 5

TABLE 19
Identifiable Faunal Remains from Mer-130

Faunal Remains	Depth (cm) 0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	150-165	Totals by Level
Jackrabbit (*Lepus californicus*)	1	3	1	7	5	3	4	7	1	2	1	35
Brushrabbit (*Sylvilagus* sp.)	1		2	4	2	6	1	1	9	1		27
Ground Squirrel (*Citellus beecheyi*)	1	7	8	10	12	15	9	11	9	9	6	97
Pocket Gopher (*Thomomys* sp.)		2	1		1	7	1	2	2	2		18
Kangaroo Rat (*Dipodomys* sp.)								1				1
Coyote or Dog (*Canis* sp.)		4	4	6	3	3	2	1	2			25
Bobcat (*Lynx rufus*)		2										2
Deer (*Odocoileus* sp.)				5	1			2				8
Antelope (*Antilocapra* sp.)	1	1		1	1							4
Elk (*Cervus elaphus*)				1								1
Deer or Antelope	4	18	31	15	9	5	3	3	9	2		99
Quail (*Lophortyx californica*)					1		1	1				3
Fish			1		1	2		1				5
TOTALS	8	37	48	49	36	41	21	30	32	16	7	325

TABLE 20
Specimens of Freshwater Shell Recovered at Mer-130

Species	Depth (cm) 0-15	15-30	30-45	45-60	60-75	75-90	90-105	105-120	120-135	135-150	Totals by Level
G. angulata	3	7	8	4	1	1	1	4	2		31
Anodonta sp.		1	4		3	2		1			11
Shell fragments (unidentified)	7	23	13	12	6	7	6	5		2	81
Snail (Helminthoglypta)			2			1	1		1		5
TOTALS	10	31	27	16	9	11	8	10	3	2	128

TABLE 21
Lithic Waste from Five Units at Mer-130

Depth (cm)	No. of Units	Silicate	Jasper Chert	Obsidian	Quartz Quartzite	Slate	Silicate Cores	Quartzite Cores
0-15	5	149 (231.8)		2 (Trace)	3 (2.5)		1 (11.0)	
15-30	5	227 (310.1)	2 (7.3)	4 (Trace)	4 (8.5)		1 (28.0)	
30-45	5	198 (287.7)		3 (.6)	2 (15.0)		2 (32.5)	1 (56.8)
45-60	5	161 (166.5)		2 (Trace)	16 (21.8)		4 (91.5)	
60-75	5	139 (271.7)		1 (Trace)	2 (1.4)			1 (26.0)
75-90	5	108 (167.6)		2 (Trace)	3 (11.3)		1 (19.5)	
90-105	5	80 (114.2)		5 (Trace)	3 (4.2)		1 (7.6)	
105-120	5	77 (107.1)	1 (7.0)	2 (Trace)	4 (3.0)		2 (27.8)	
120-135	4	74 (110.7)		2 (.7)	5 (5.3)	1 (Trace)	1 (20.7)	
135-150	2	21 (27.7)			1 (4.6)			
150-165	2	12 (24.4)					1 (11.6)	
165-180	1	4 (13.5)						
TOTALS		1,250 (1,833.0)	3 (14.3)	23 (1.3)	43 (77.6)	1	14 (2,502)	2 (82.8)

All units 1/4-in screen

Number of specimens (weight in grams)

J-0294R

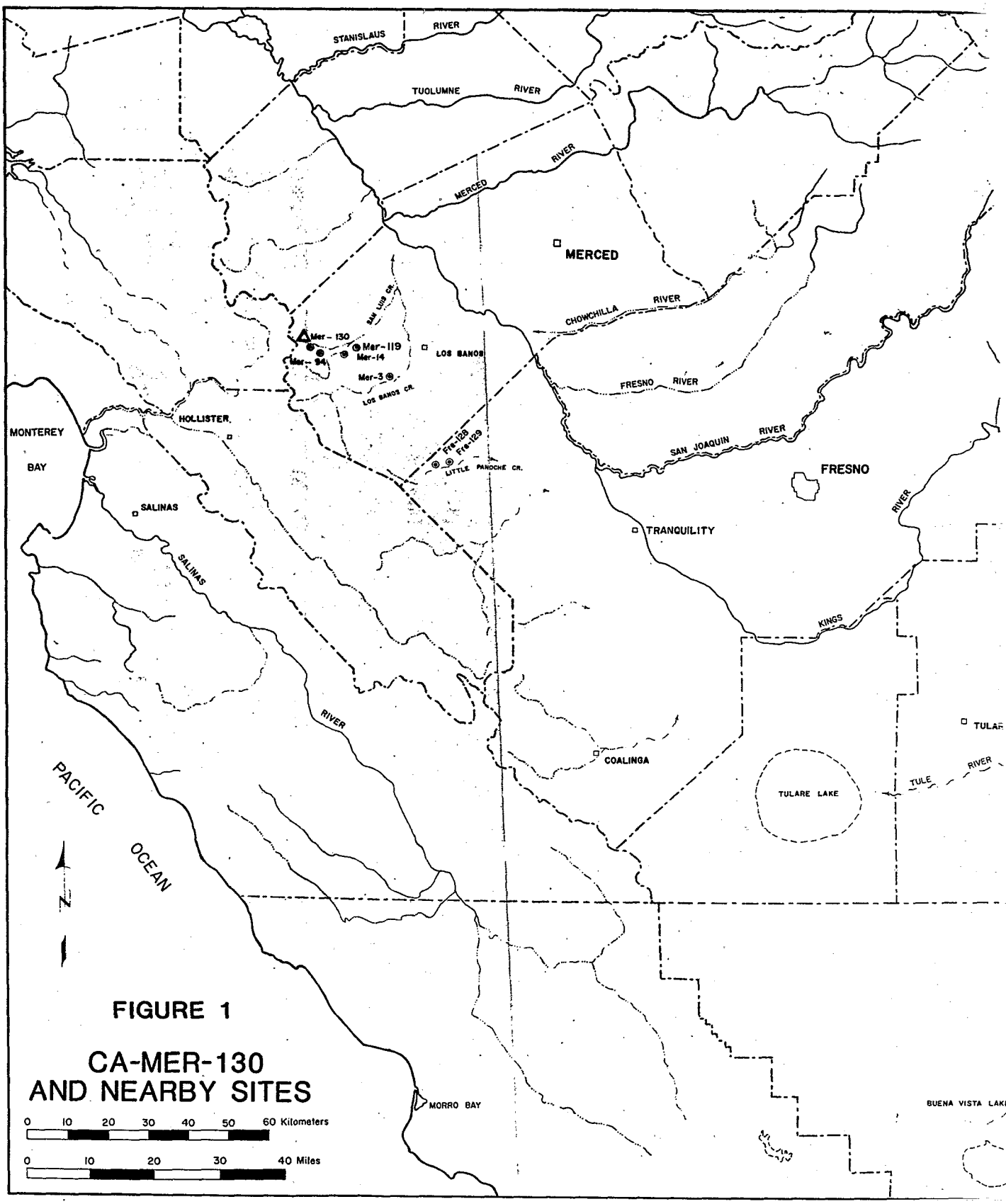


FIGURE 1

CA-MER-130 AND NEARBY SITES

C—075727

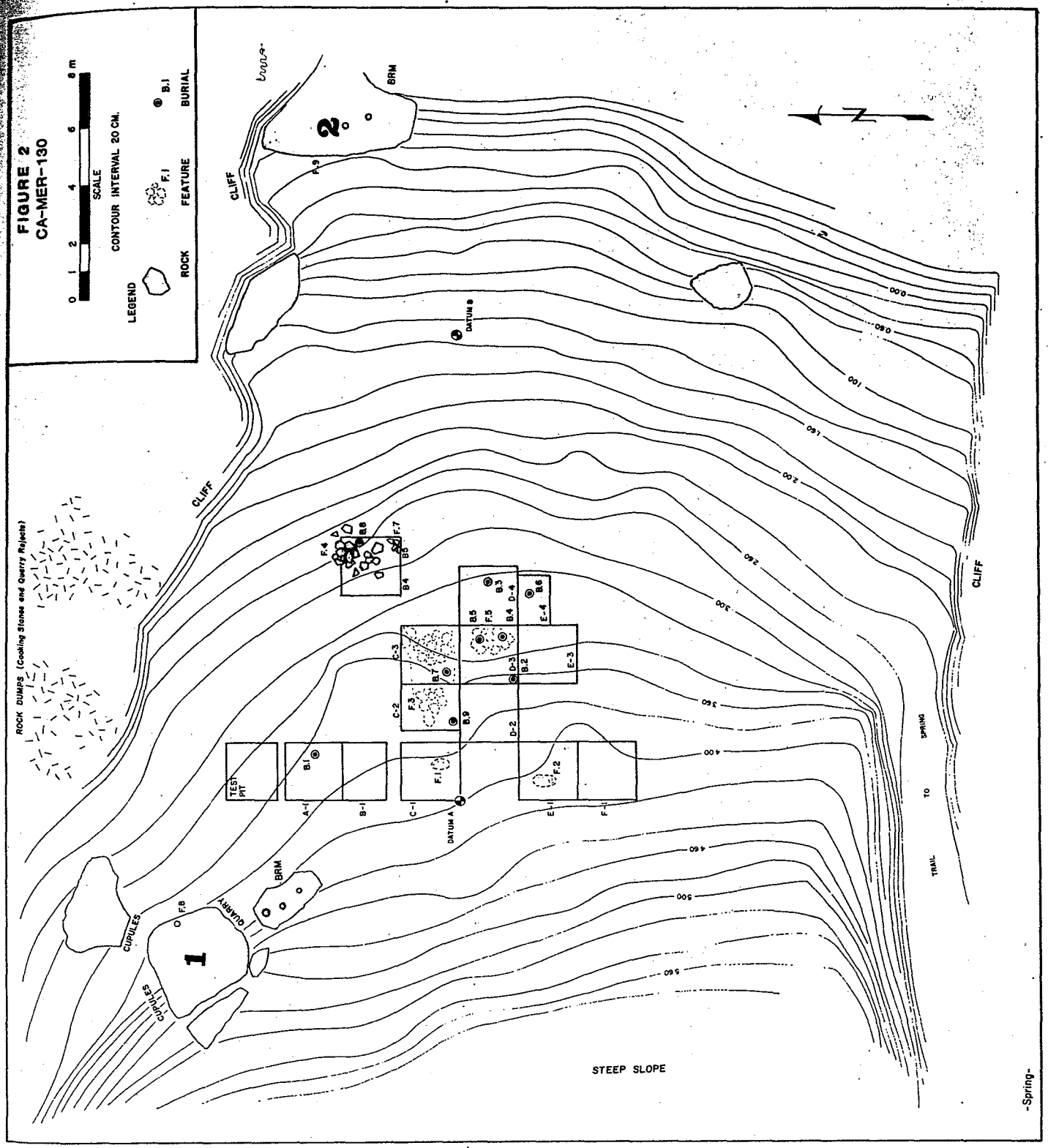
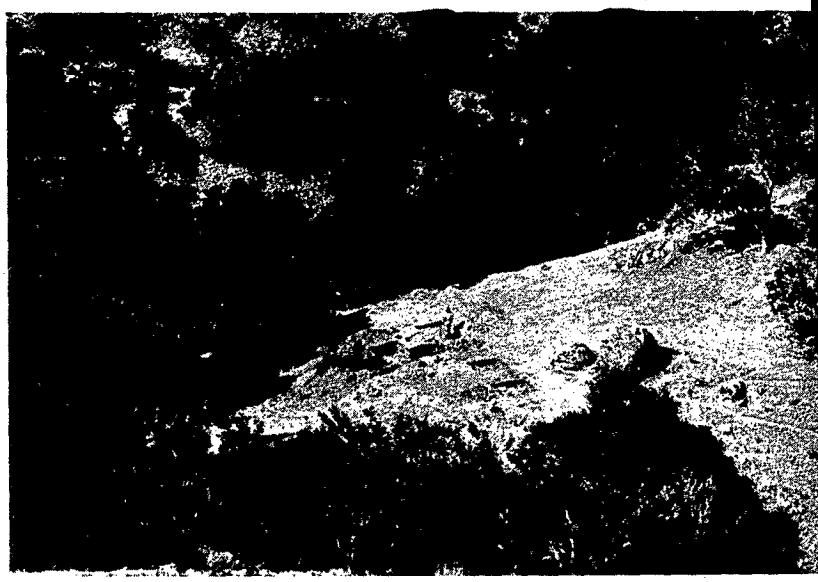


Figure 2

a



b

c

44 Figure 3. Mer-130: a) overview, looking west; b) site during excavation; c) outcrop used as quarry source for pestle material.

Figure 4. Beads and ornaments from Mer-130

Olivella beads

a) Type Ala (#78)
b) Types Alc, Alb (#981)
c) Type B2b (#981)
d) Type A5 or 01 (#804)
e) Type E1 (#1827)
f) Type E1 (#373)
g) Type E1 (#919)
h) Type E2 (?) (#847)
i) Type C8 (#919)
j) Type Mla (#252)
k) Steatite disk bead (#773)
l) Slate bead (#807)
m) *Haliotis* disk bead (#204)

Haliotis ornaments

n) Incised fragment (#806)
o) Incised fragment (#724)
p) Fragment, Type M2dII (#777)
q) Fragment, Type M2dII (#806)
r) Fragment, Type M2dII (#1013)
s) Fragment, Type MB(1)1 (?) (#998)
t) Type MB1 (#1002)
u) Oval (#1001)
v) Fragment, perforated (#782)
w) Fragment, pendant (?) (#178)

Scale 1:1

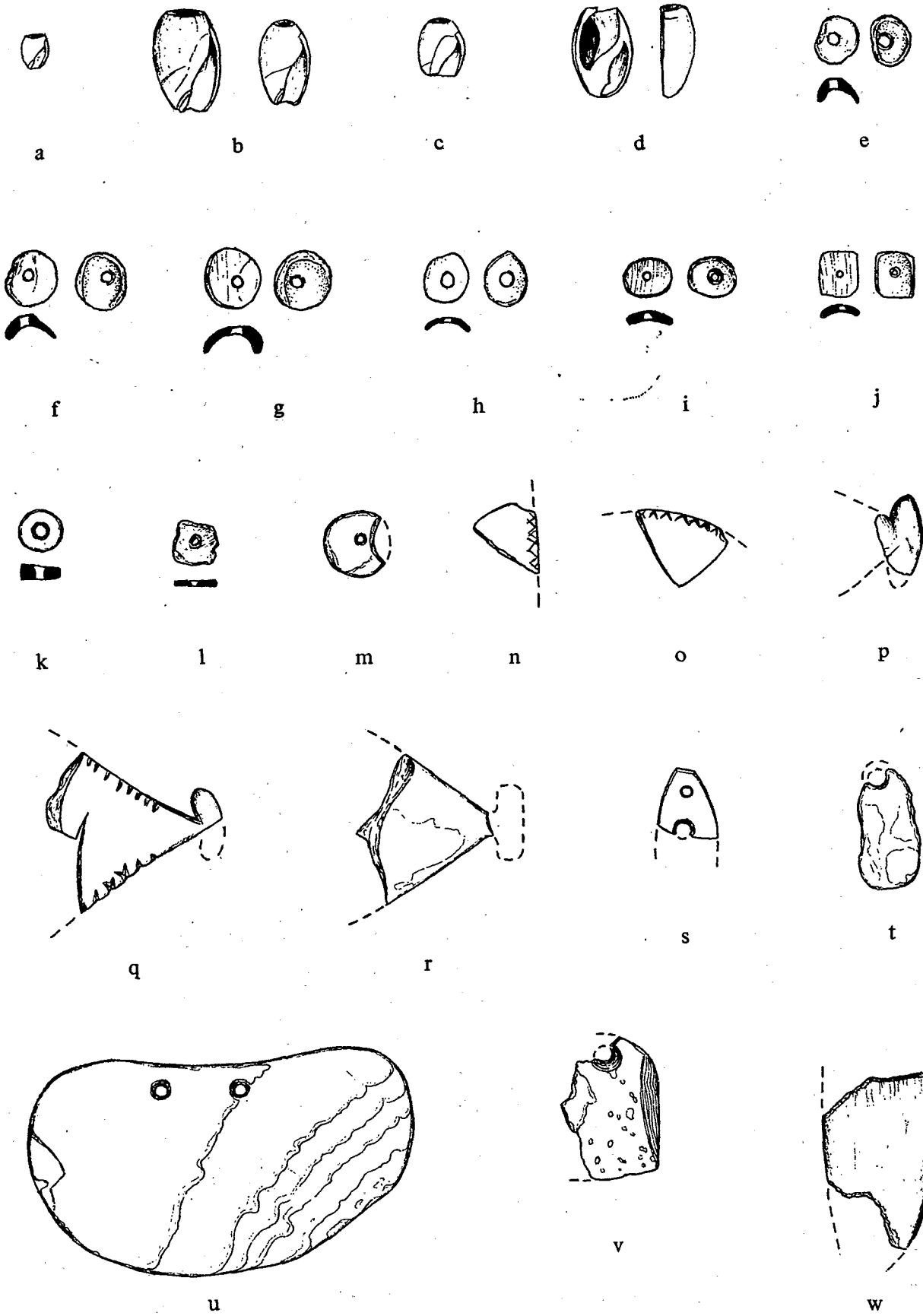


Figure 5. Bone artifacts from Mer-130

a) Metapodial awl (#93)
b) Metapodial awl (#332)
c) Splinter awl (#512)
d) Awl tip fragment (#123)
e) Awl tip fragment (#985)
f) Awl tip fragment (#162)
g) Awl tip fragment (#225)
h) Awl tip fragment (#574)
i) Scapula saw (#692)

Scale 1:1

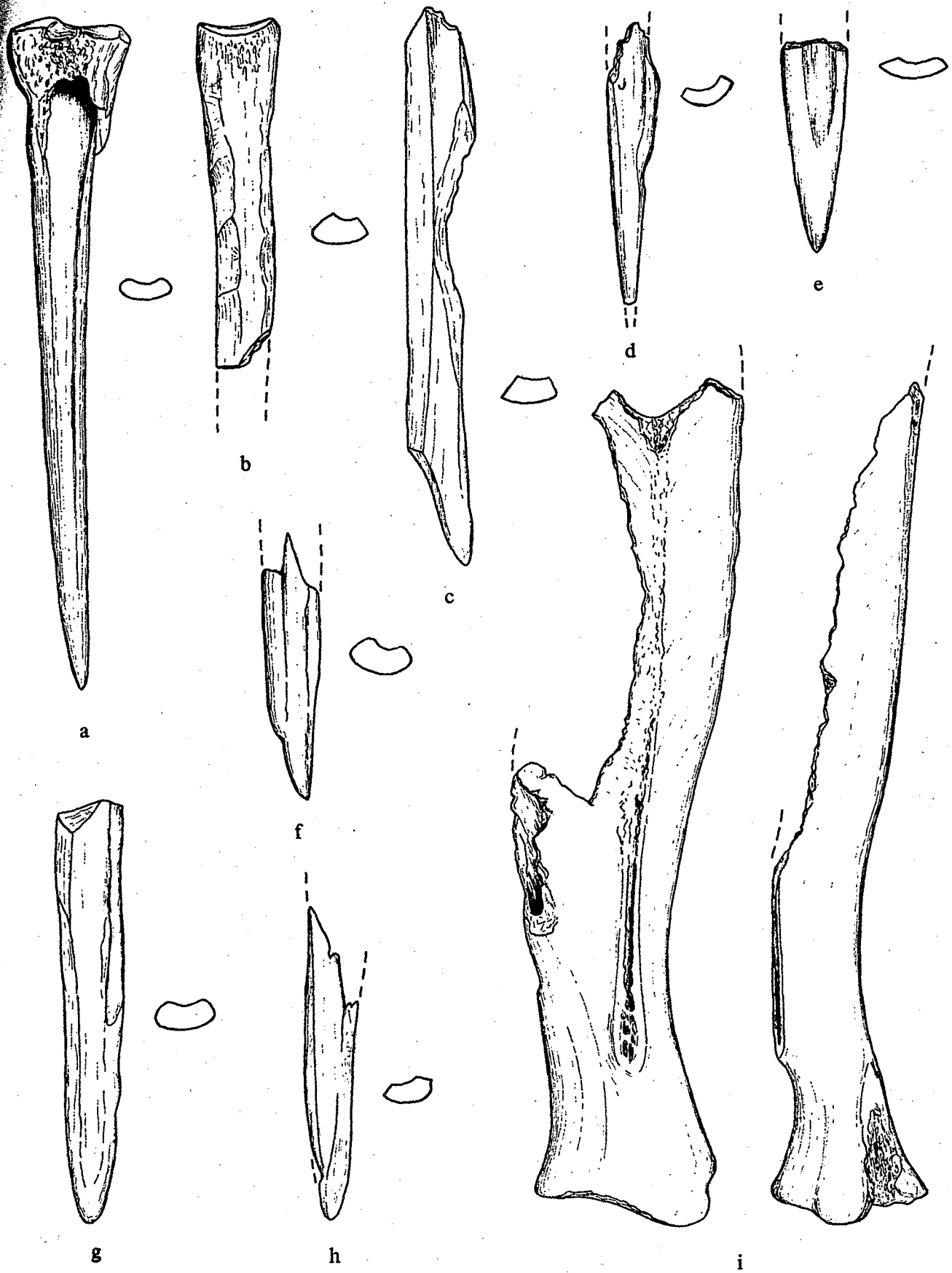


Figure 6. Bone artifacts from Mer-130

a) Mammal bone tube (#691)
b) Mammal bone whistle, incised (#562)
c) Bird bone tube (#20); found inserted into larger tube (#21)
d) Bird bone tube (#21)
e) Incised bird bone tube fragment (#812)
f) Bird bone bead (#491)
g) Bird bone bead (#318)
h) Bird bone bead (#813)
i) Antler flaker (#122)
j) Antler flaker (#616)
k) Antler fish spear (?) fragment (#891)
l) Bone spatula fragment (#182)
m) Bone pin fragment (#177)

Scale 1:1

FIGURE 6

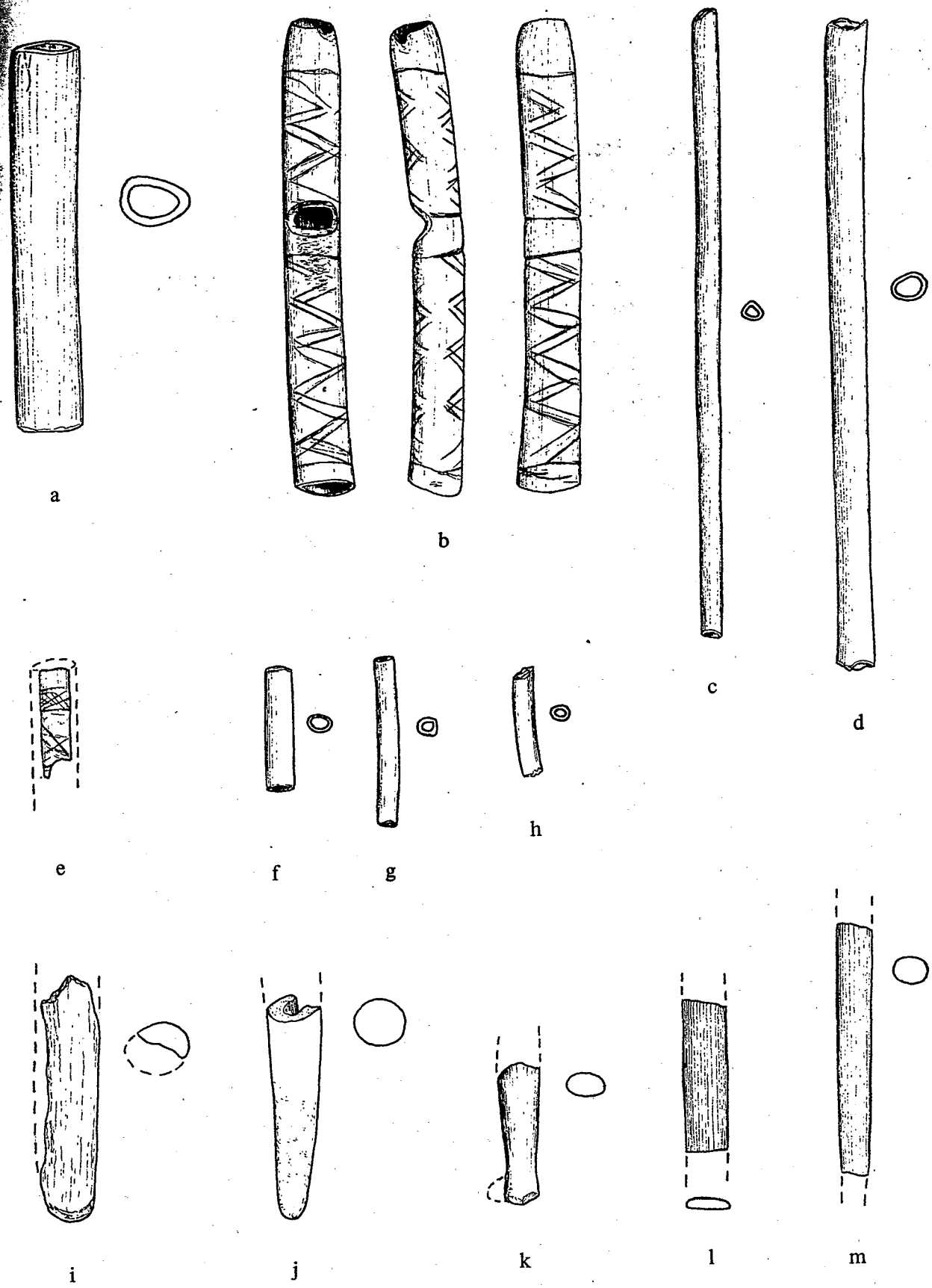


Figure 7. Projectile points from Mer-130

Panoche side-notched

a) Type 1 (#50)
b) Type 1 (#900)
c) Type 1 (#583)
d) Type 1 (#398)
e) Type 1 (#60)
f) Type 2 (#529)
g) Type 1 (#657)
h) Type 1 (#731)
i) Type 1 (#13)
j) Type 1 (#632)
k) Type 1 (#258)
l) Type 1 (#300)
m) Type 2 (#517)
n) Type 1 (#230)
o) Type 1 (#199)
p) Type 1 (#136)
q) Type 1 (#198)
r) Type 1 (#898)
s) Type 1 (#493)
t) Type 1 (#119)
u) Type 2 (#799)
v) Type 2 (#756)
w) Type 1 (#9)
x) Type 1 (#617)
y) Type 2 (#494)
z) Type 1 (#102)
aa) Type 1 (#600)
bb) Type 1 (#249)
cc) Type 1 (#558)
dd) Type 1 (#440)
ee) Type 1 (#257)

Triangular

ff) Type 1 (#829)
gg) Type 2 (#410)
hh) Type 2 (#926)
ii) Type 2 (#299)
jj) Type 1 (#201)
kk) Type 1 (#144)
ll) Type 2 (#8)
mm) Type 2 (#711)
nn) Type 2 (#941)
oo) Large tapered base (#923)
pp) Large corner-notched (#298)
qq) Large side-notched (#755)
rr) Type 2 (#959)
ss) Type 2 (#876)
tt) Type 2 (#72)

Scale 1:1

FIGURE 7

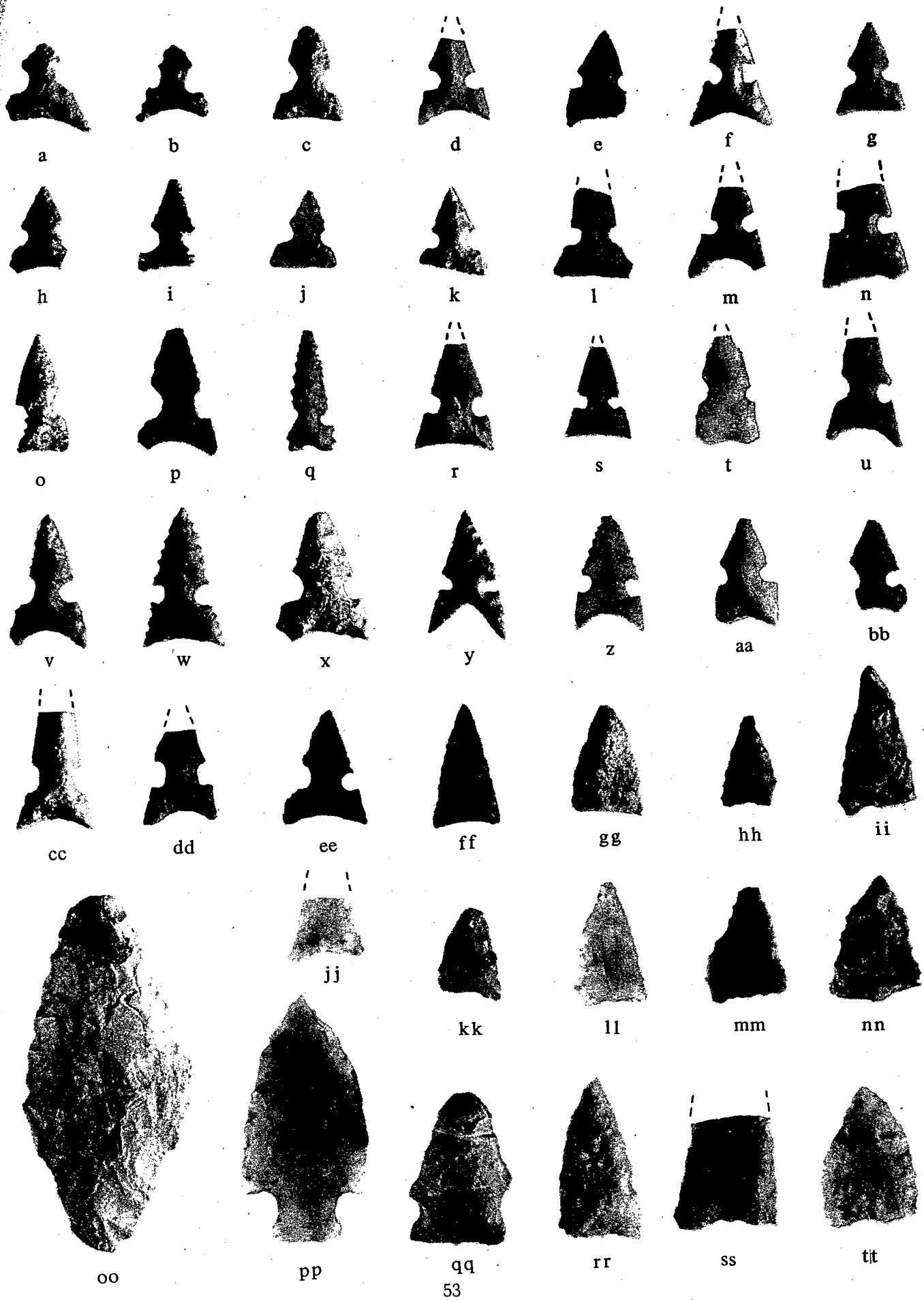


Figure 8. Chipped stone artifacts from Mer-130

a) Flake drill (#267)
b) Flake drill (#538)
c) Flake drill (#655)
d) Flake drill (#268)
e) Triangular projectile point, Type 3 (#11)
f) Triangular projectile point, Type 3 (#143)
g) Pointed flake graver (#925)
h) Pointed flake graver (#500)
i) Gouge (#726)
j) Gouge (#707)
k) Gouge (prismatic flake) (#582)
l) Gouge (#270)
m) Prismatic blade scraper (#935)
n) Prismatic blade scraper (#266)
o) Prismatic blade scraper (#17)

Scale 1:1

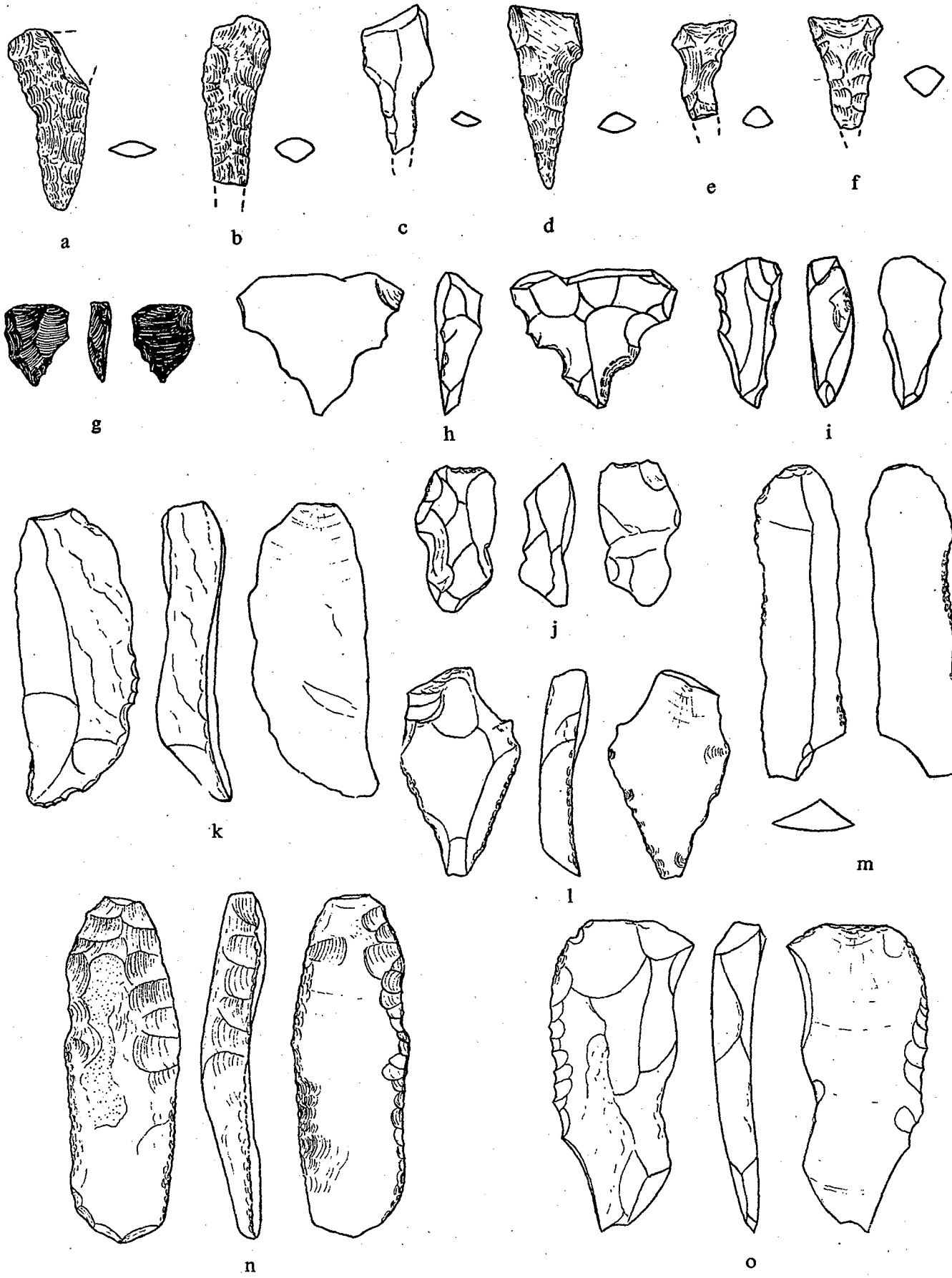


Figure 9. Chipped stone artifacts from Mer-130

a) Flake scraper (#708)
b) Flake scraper (#436)
c) Flake scraper (#740)
d) Flake scraper (#271)
e) Flake scraper (#913)
f) Flake scraper (#889)
g) Flake scraper (#69)
h) Flake scraper (#752)
i) Flake scraper (#482)
j) Flake scraper (#209)

Scale 1:1

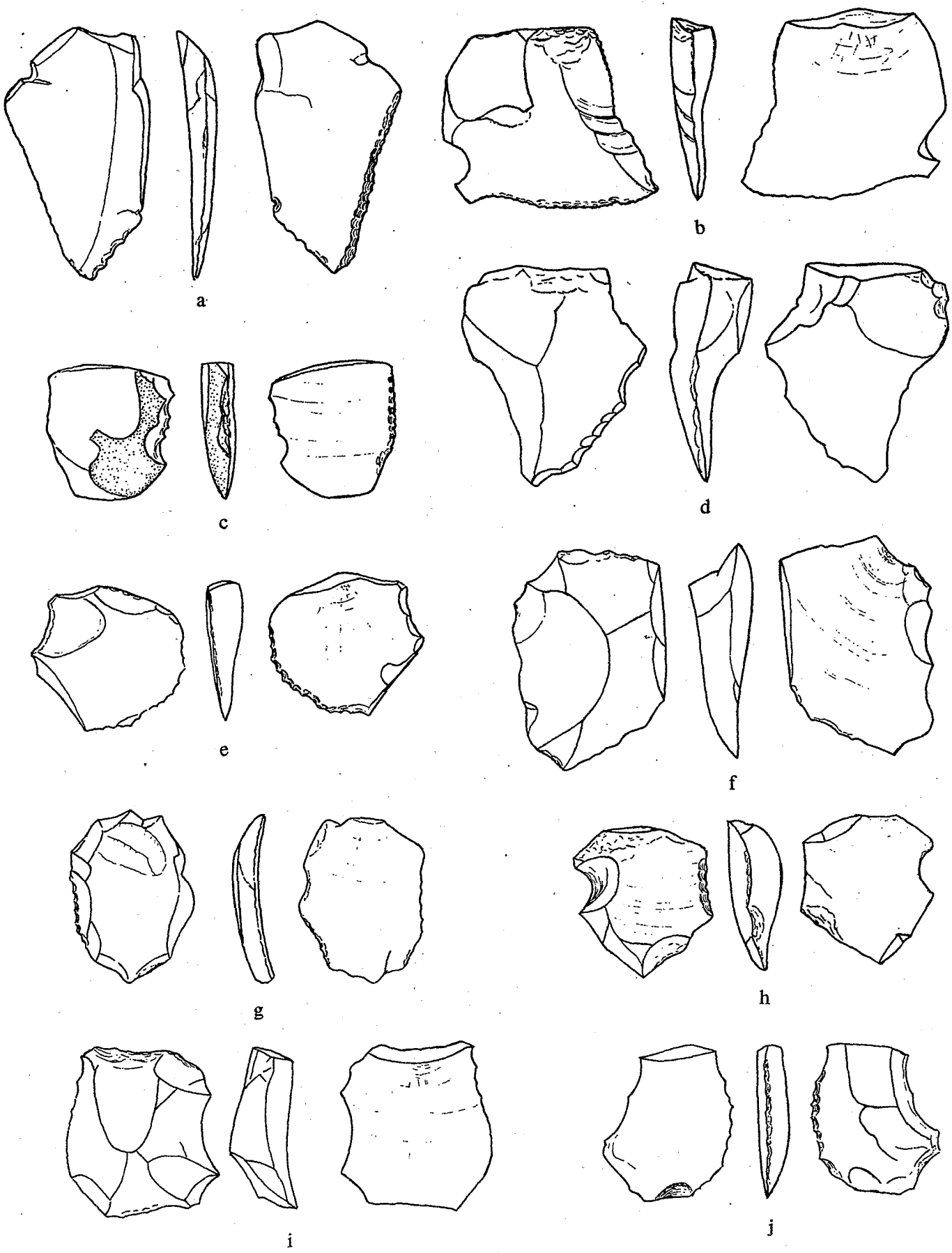


Figure 10. Chipped stone artifacts from Mer-130

a) Flake scraper (#306)
b) Flake scraper (#914)
c) Flake scraper (#261)
d) Flake scraper (bottle glass) (#879)
e) Flake scraper (#1011)
f) Flake scraper (#865)
g) Flake scraper (#273)
h) Flake scraper (#272)
i) Flake scraper (#140)
j) Flake scraper (#307)
k) Flake scraper (#325)
l) Flake scraper (bifacial) (#18)
m) Flake scraper (bifacial) (#548)

Scale 1:1

Figure 11. Chipped stone artifacts from Mer-130

a) Steep-edge scraper (#5)
b) Steep-edge scraper (#934)
c) Steep-edge scraper (#314)
d) Steep-edge scraper (#922)
e) Steep-edge scraper (#42)
f) Steep-edge scraper (#866)
g) Steep-edge scraper (#222)
h) Steep-edge scraper (#532)
i) Steep-edge scraper (#55)

Scale 1:1

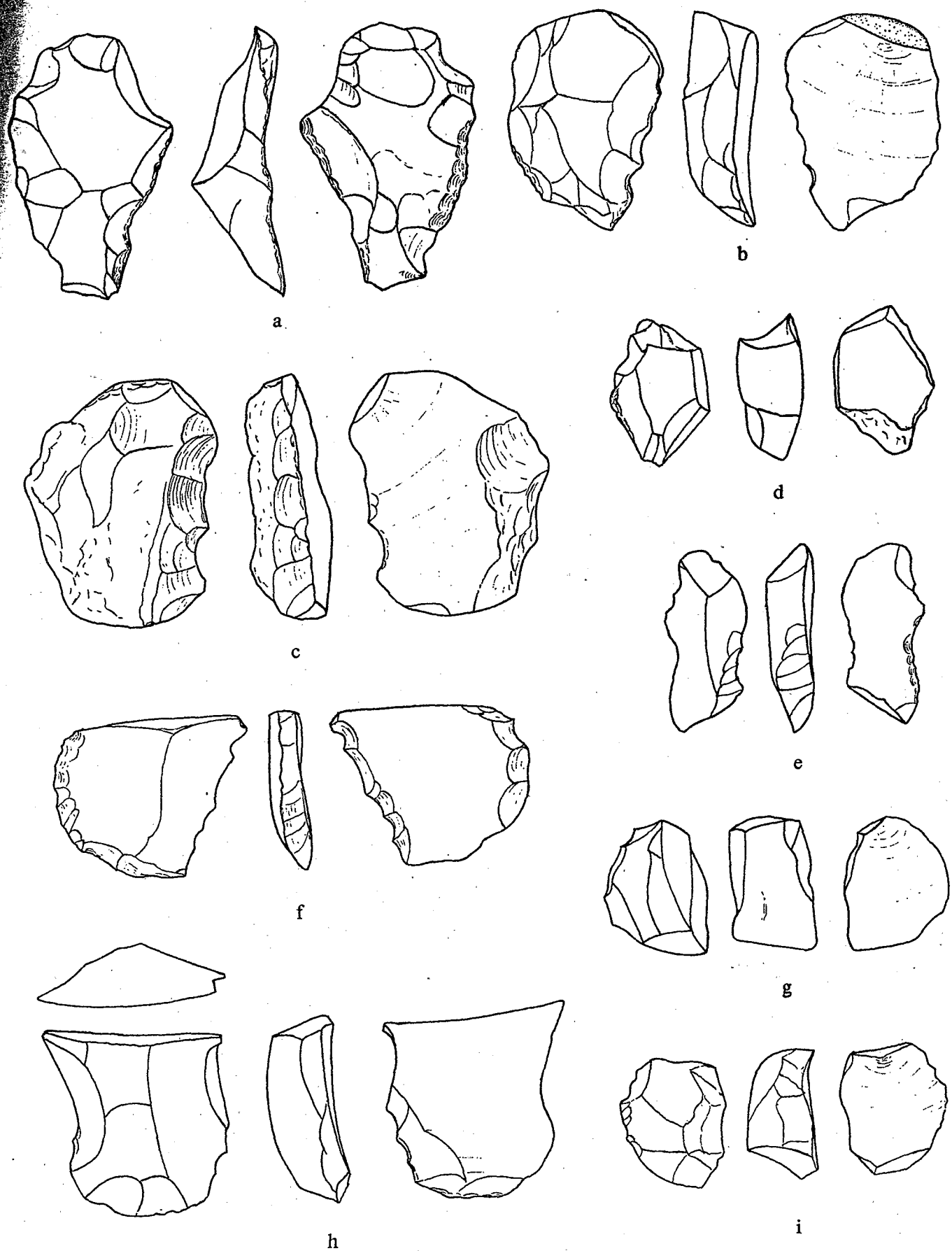
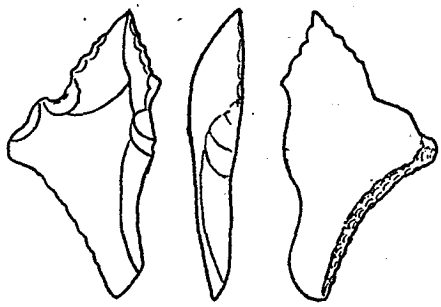


Figure 12. Chipped stone artifacts from Mer-130

a) Steep-edge scraper (#193)
b) Steep-edge scraper (#706)
c) Steep-edge scraper (#120)
d) Steep-edge scraper (#624)
e) Steep-edge scraper (#609)
f) Steep-edge scraper (#775)
g) Steep-edge scraper (#409)
h) Biface flake knife (#841)
i) Steep-edge scraper (#983)
j) Biface flake knife (#38)

Scale 1:1



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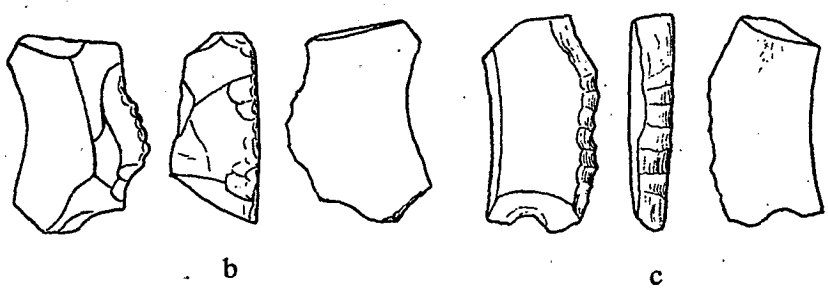

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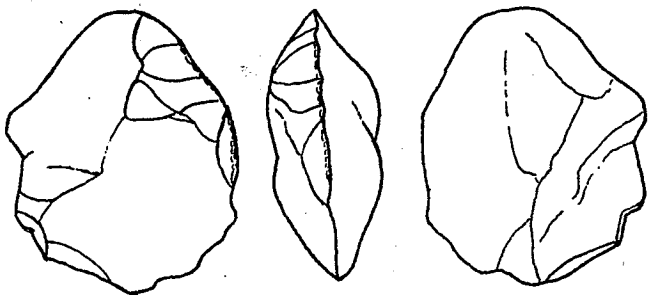

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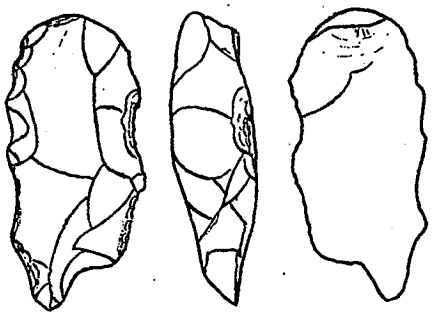

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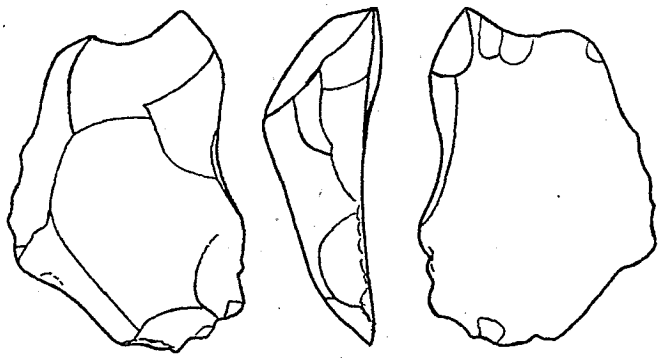

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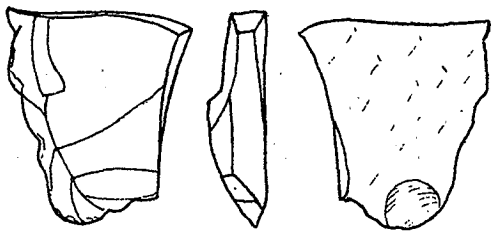

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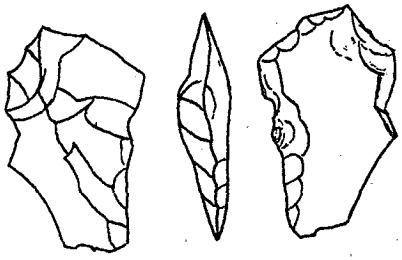

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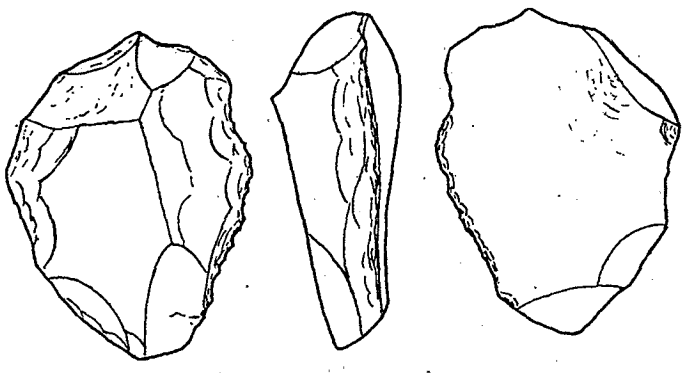

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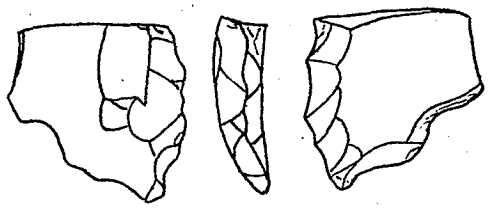


j

Figure 13. Chipped stone artifacts from Mer-130

a) Biface flake knife (#856)
b) Biface flake knife (#374)
c) Biface flake knife (#4)
d) Biface flake knife (#33)
e) Biface flake knife (#309)
f) Core scraper (#137)
g) Core scraper (#383)
h) Core scraper (#965)
i) Core scraper (#475)
j) Core scraper (#874)
k) Core (#350)

Scale 1:1

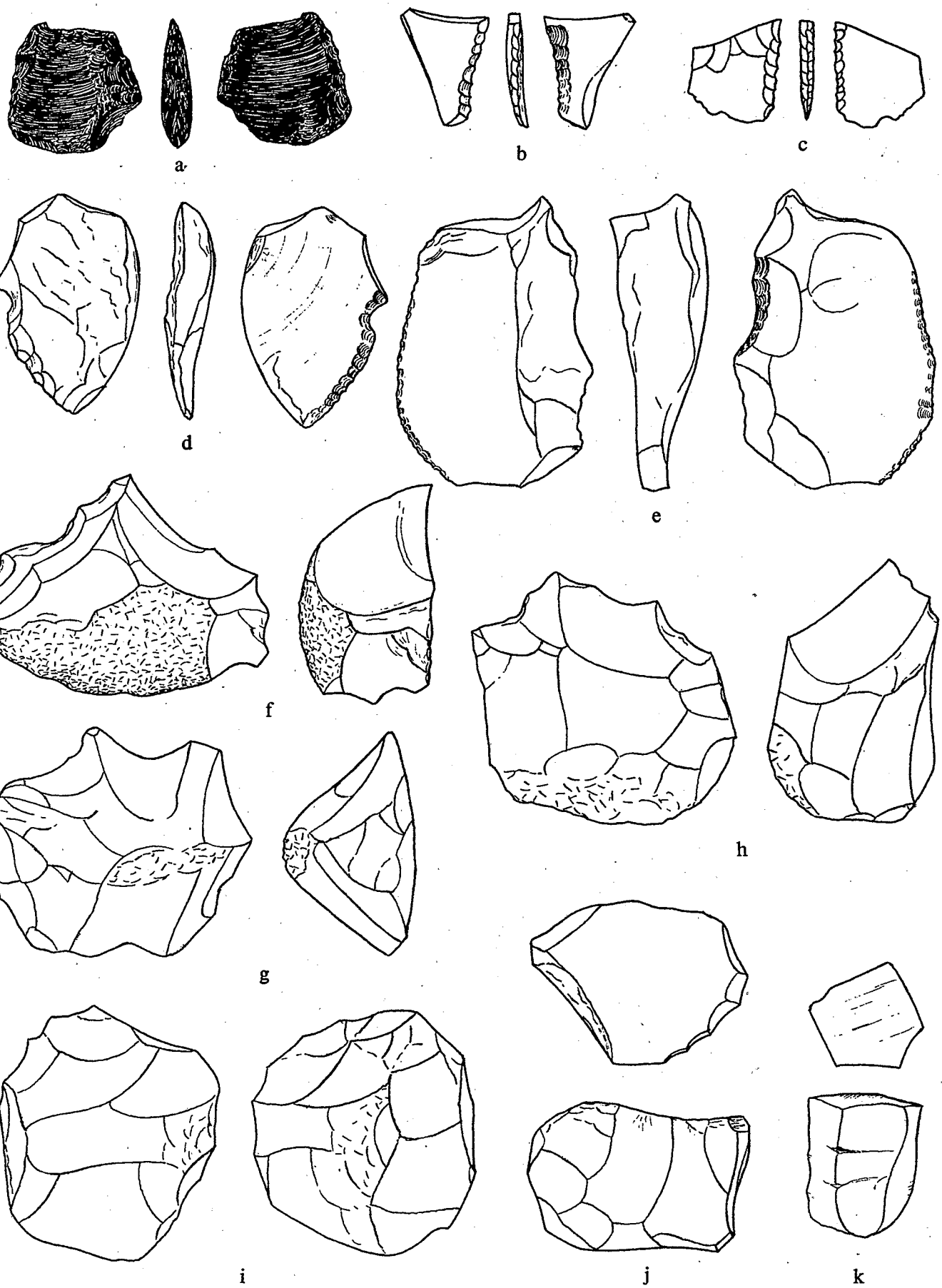


Figure 14. Mer-130: artifacts of steatite, calcite, serpentine, and slate

a) Conical steatite pipe fragment (#648)
b) Steatite spool earplug (asphaltum on concave face) (#118)
c) Calcite earplug facing (asphaltum on convex side) (#1000)
d) Steatite spool earplug fragment (#927)
e) Steatite stemmed earplug (#880)
f) Steatite stemmed earplug (#345)
g) Rectangular serpentine bead (#835)
h) Steatite bead blank (?) (#690)
i) Slate bipoint pin (#940)
j) Ground slate object (#915)
k) Ground slate fragment (#654)
l) Ground slate fragment (#234)
m) Ground slate object (#519)
n) Ground slate object (#456)

Scale 1:1

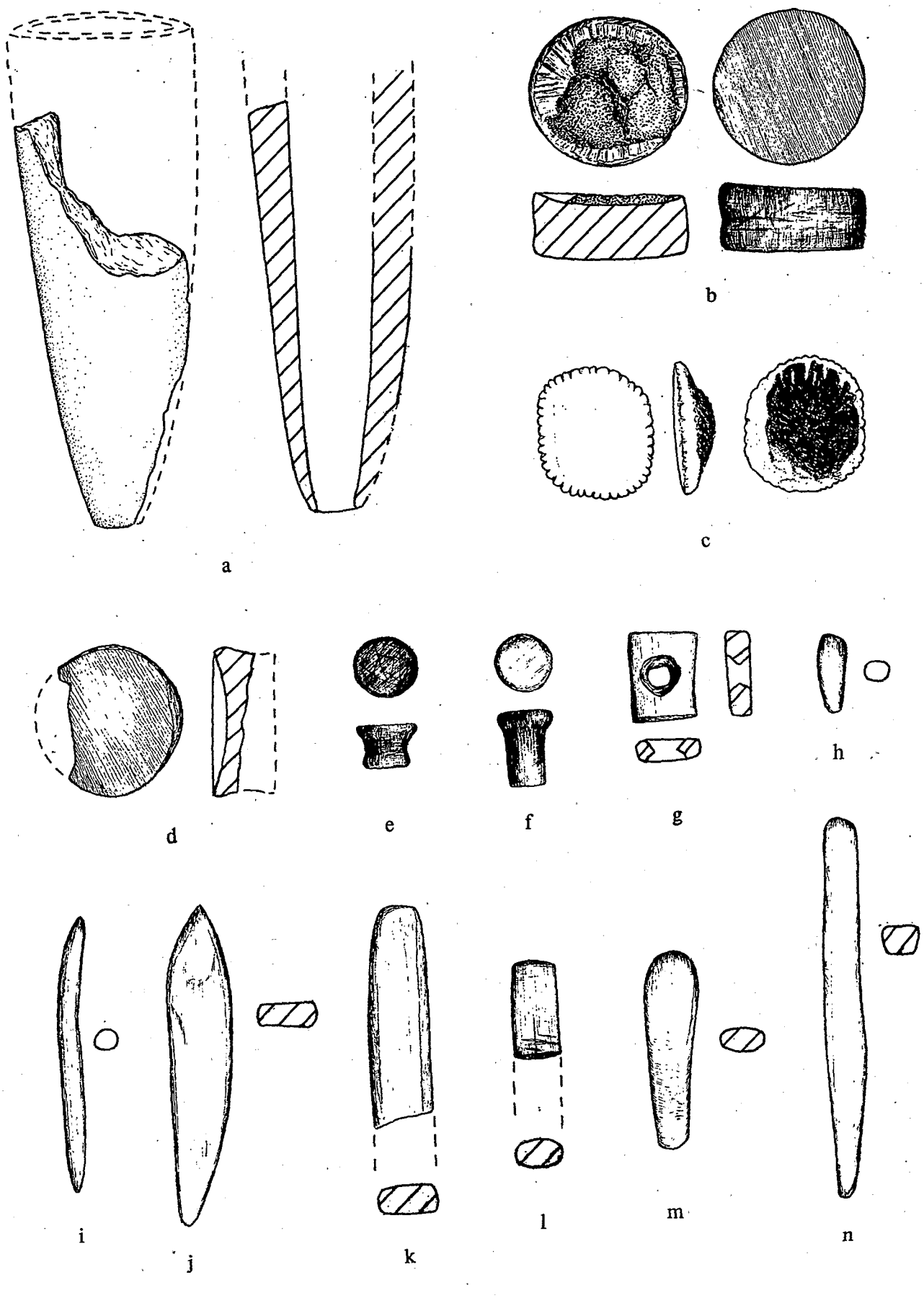
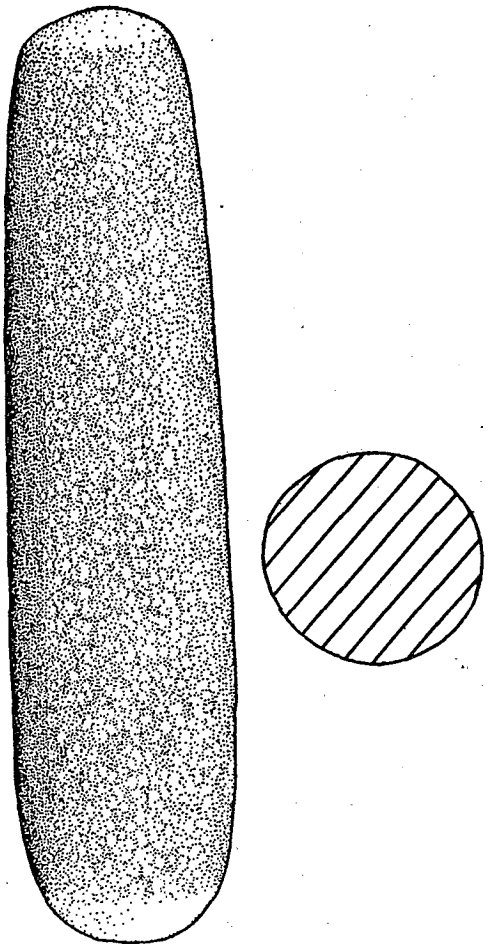


Figure 15. Pestles from Mer-130

a) Conical dressed pestle (#464)
b) Conical dressed pestle (#861)
c) Conical dressed pestle (#329)
d) Conical dressed pestle (#933)

Scale .5:1



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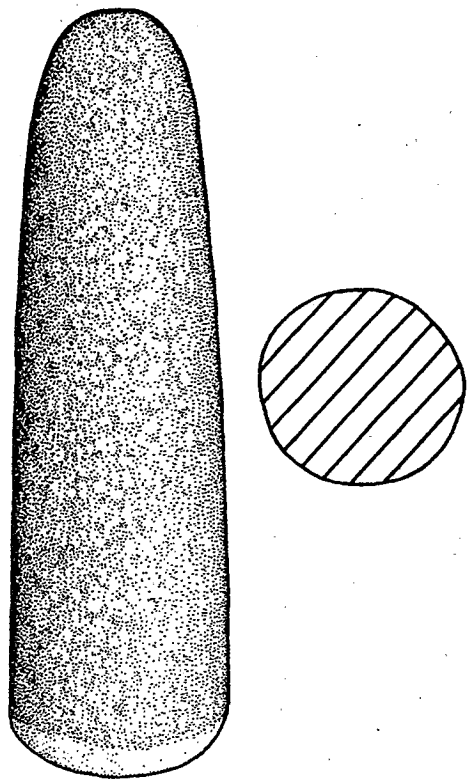

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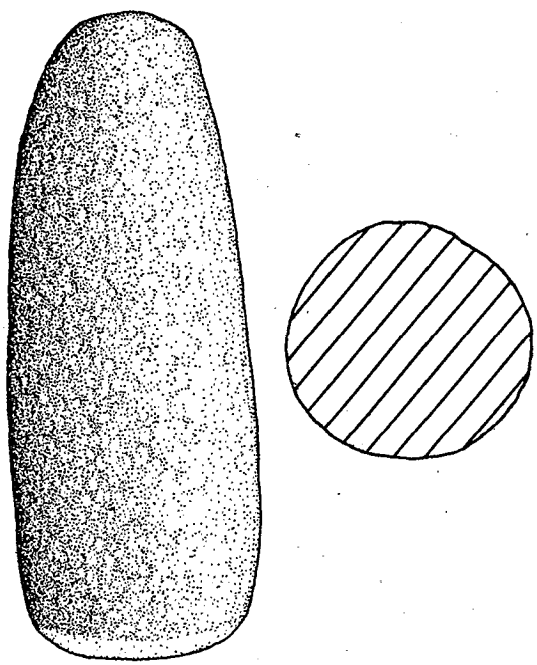

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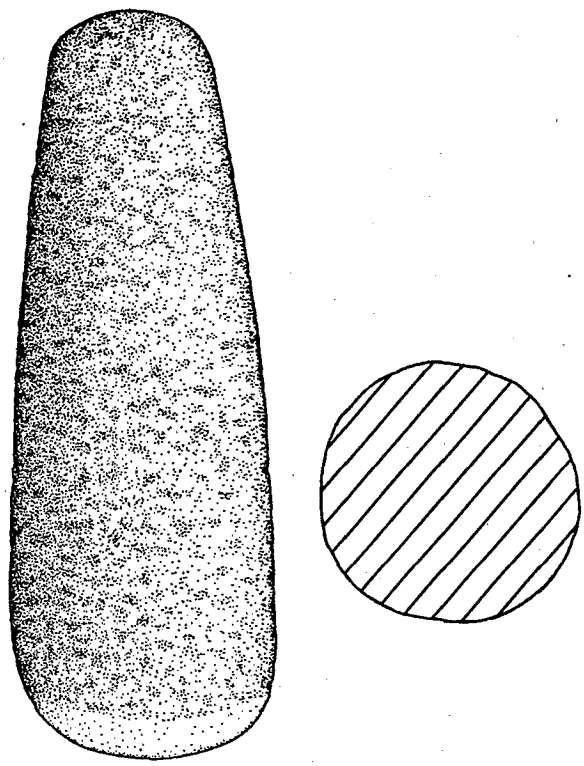
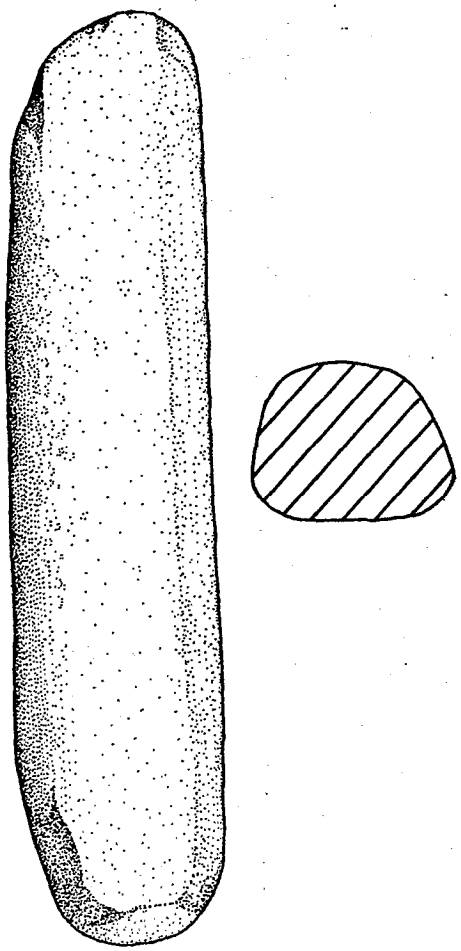


d

Figure 16. Pestles from Mer-130

a) Cobble pestle (#507)
b) Conical pestle fragment (#989)
c) Cobble pestle (#173)
d) Cobble pestle (#297)

Scale .5:1



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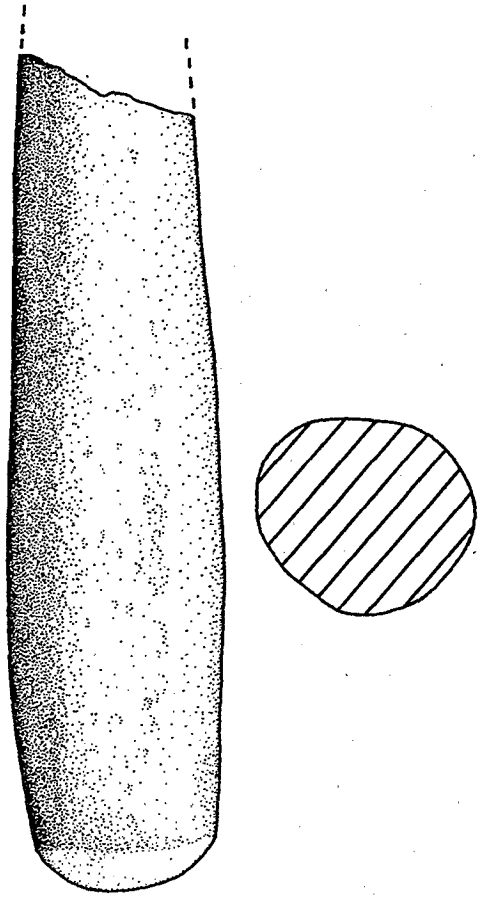

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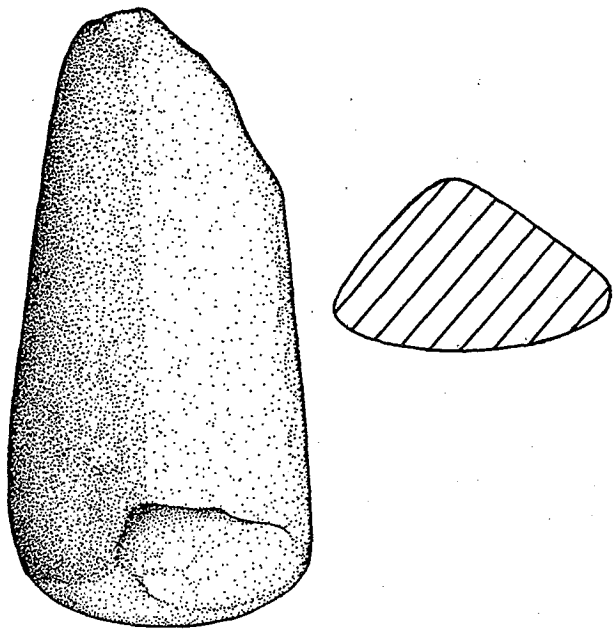

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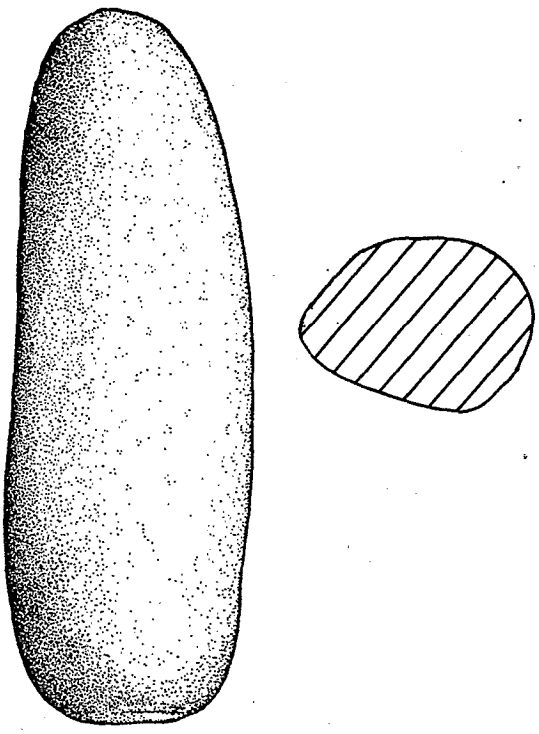


d

Figure 17. Pestles and cobble tools from Mer-130

a) Unfinished pestle (#551)
b) Unfinished pestle (#977)
c) Conical dressed pestle (#1005)
d) Cobble hammerstone (#404)
e) Cobble hammerstone (#966)
f) Cobble hammerstone (#921)
g) Pitted cobble (#54)

Scale .5:1

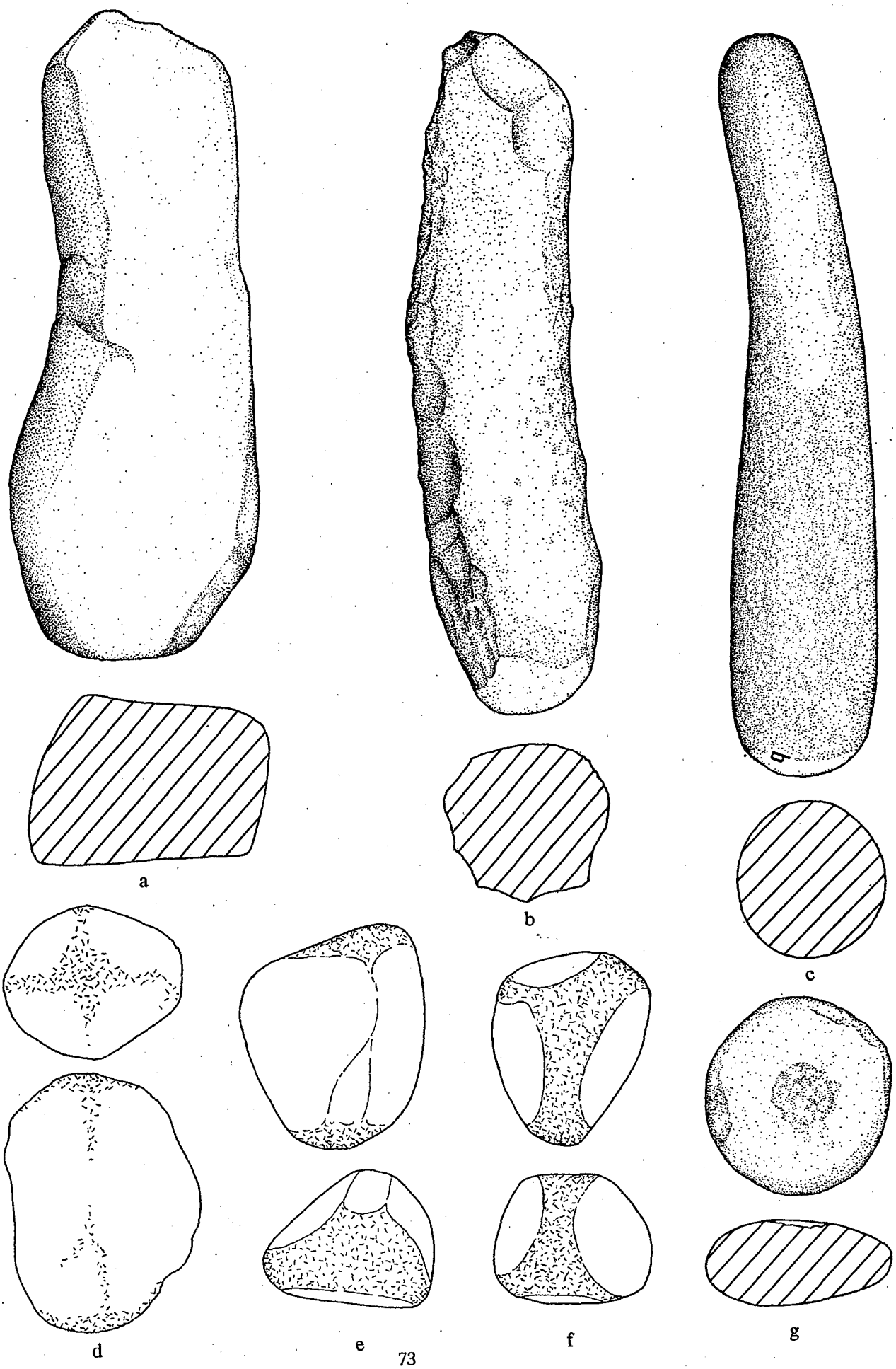
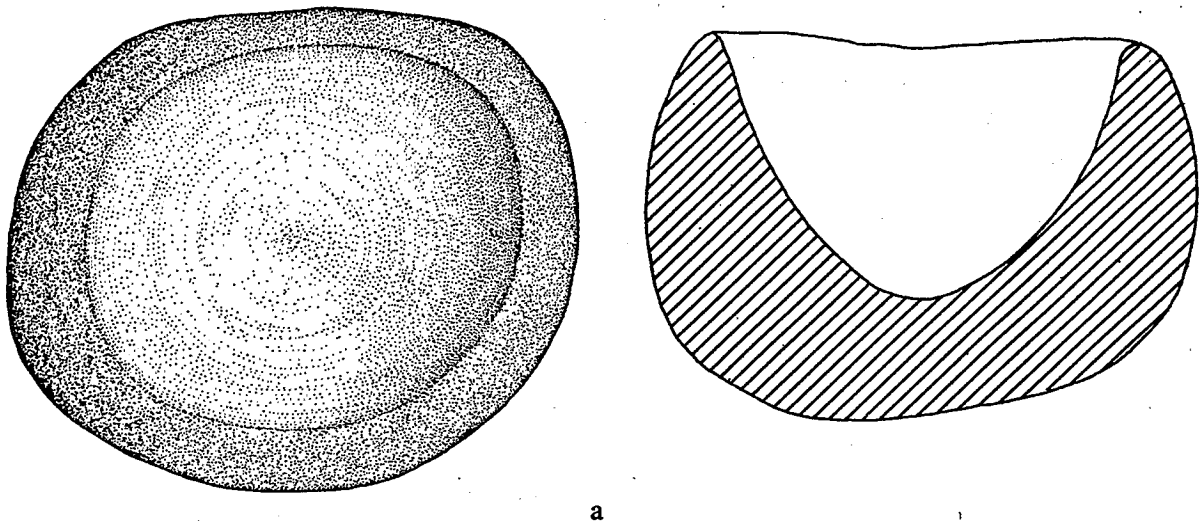


Figure 18. Ground stone from Mer-130

a) Bowl mortar (large) (#1004)
b) Bowl mortar (small) (#734)
c) Thin slab milling stone (#605)

Scale .25:1

FIGURE 18



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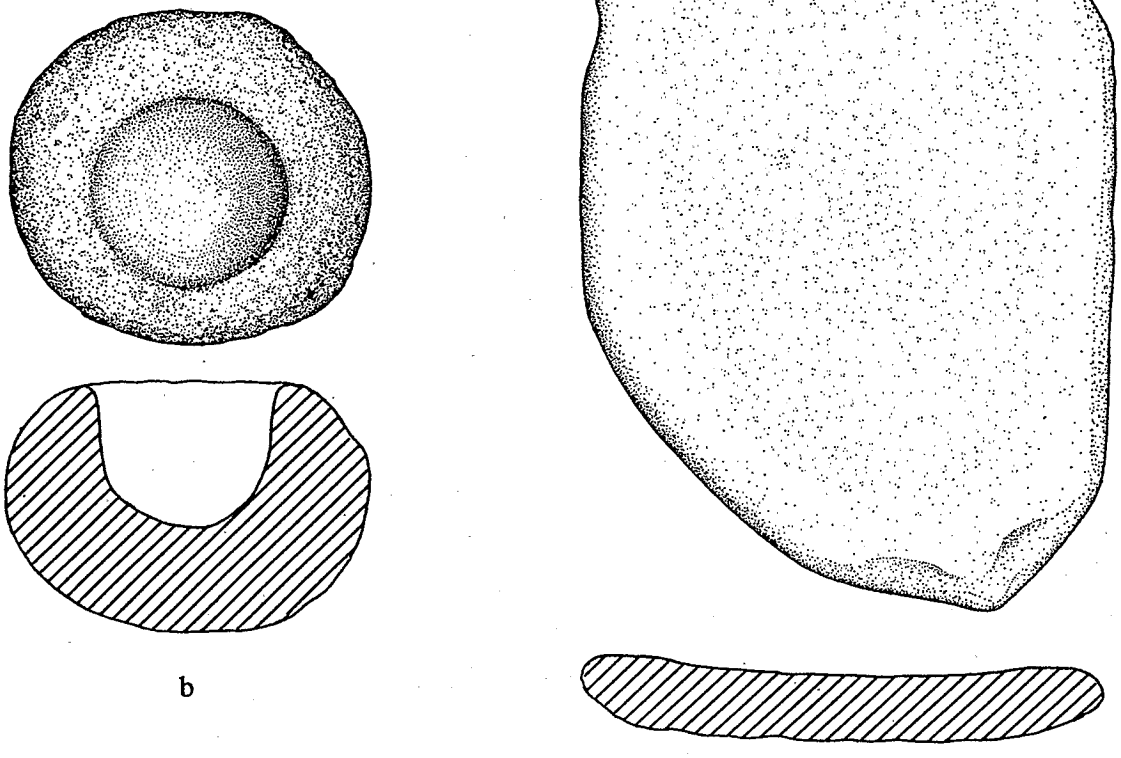


b

c

Figure 19. Ground stone from Mer-130

a) Slab mortar (#987)
b) Slab mortar (#986)

Scale .25:1

FIGURE 19

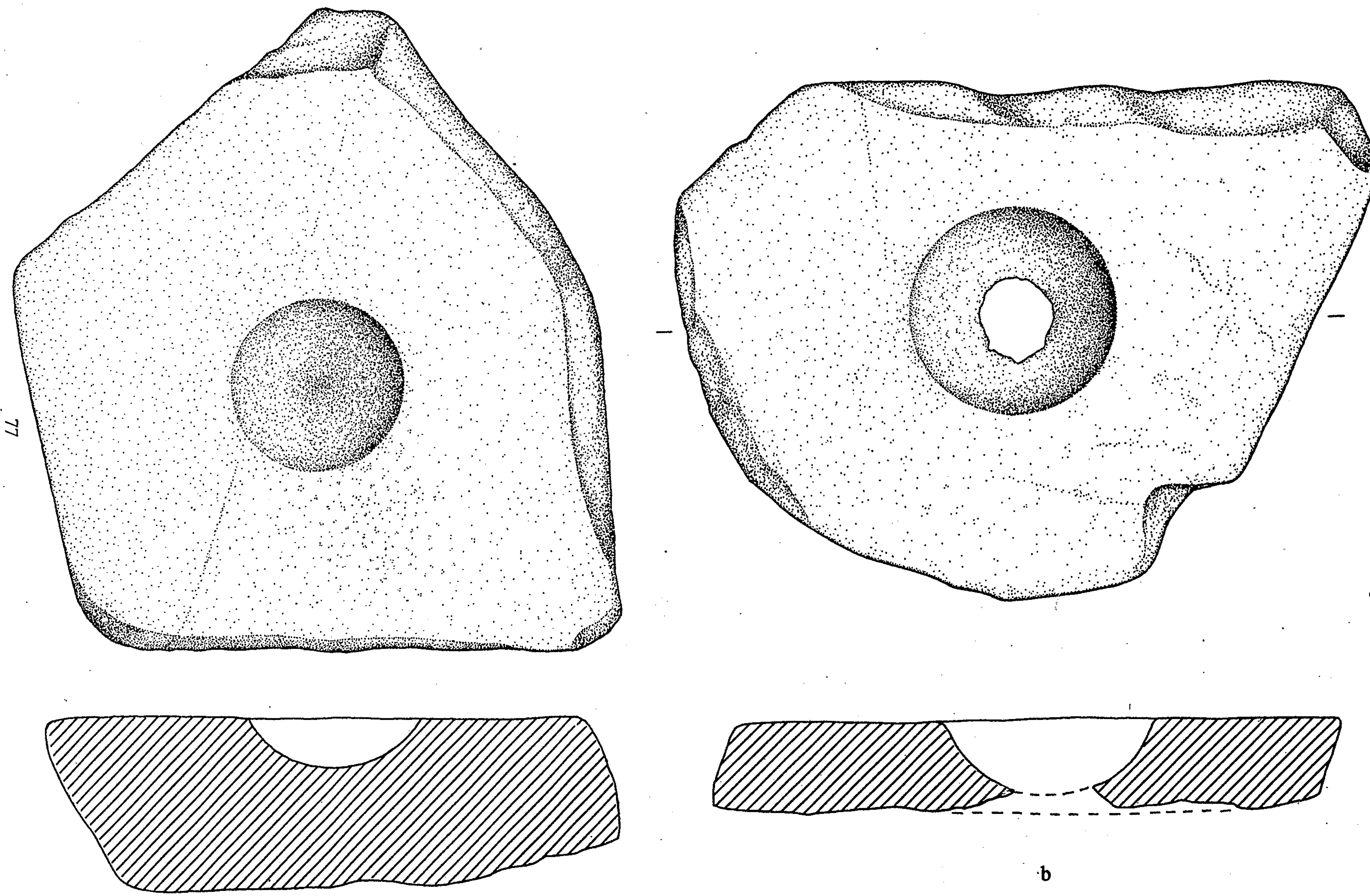
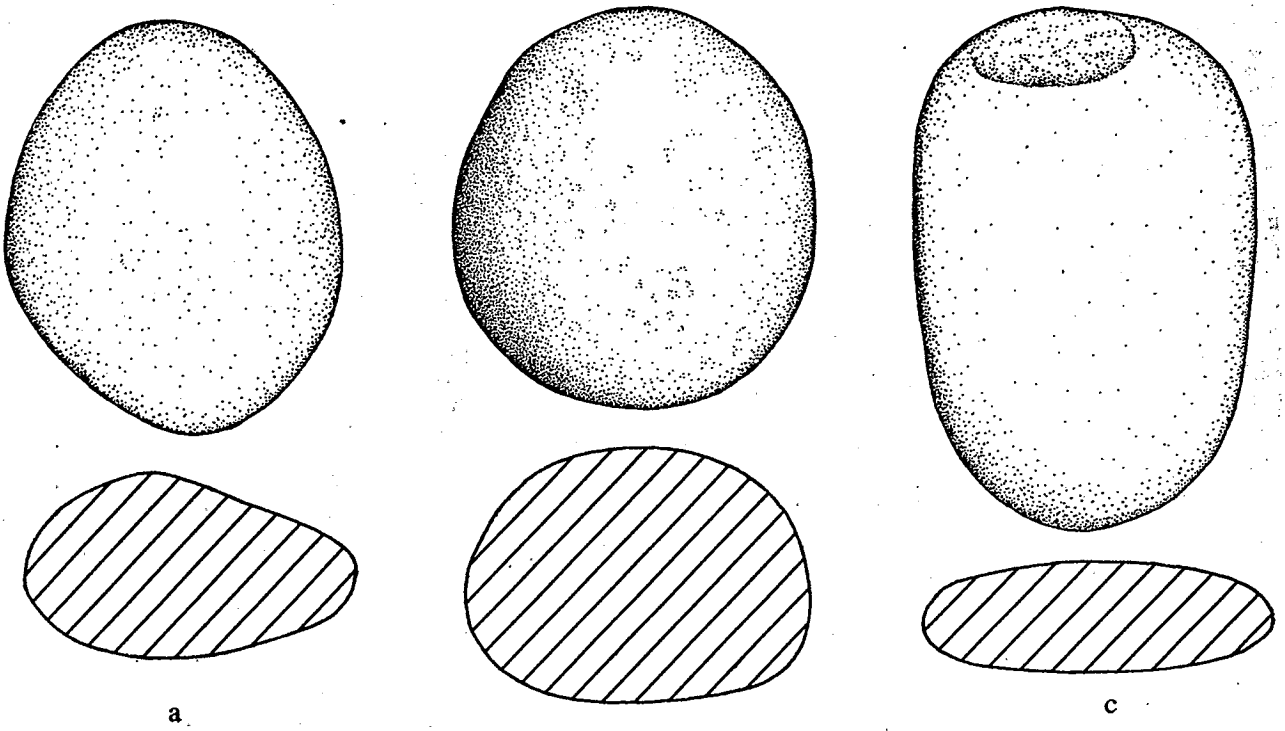


Figure 20. Manos and pitted cobble from Mer-130

Manos:

a) Uniface cobble (#87)
b) Oval biface (#2)
c) Rectangular biface (#163)
d) Plano-convex (#961)
e) Rectangular biface (#776)
f) Pitted cobble (#962)

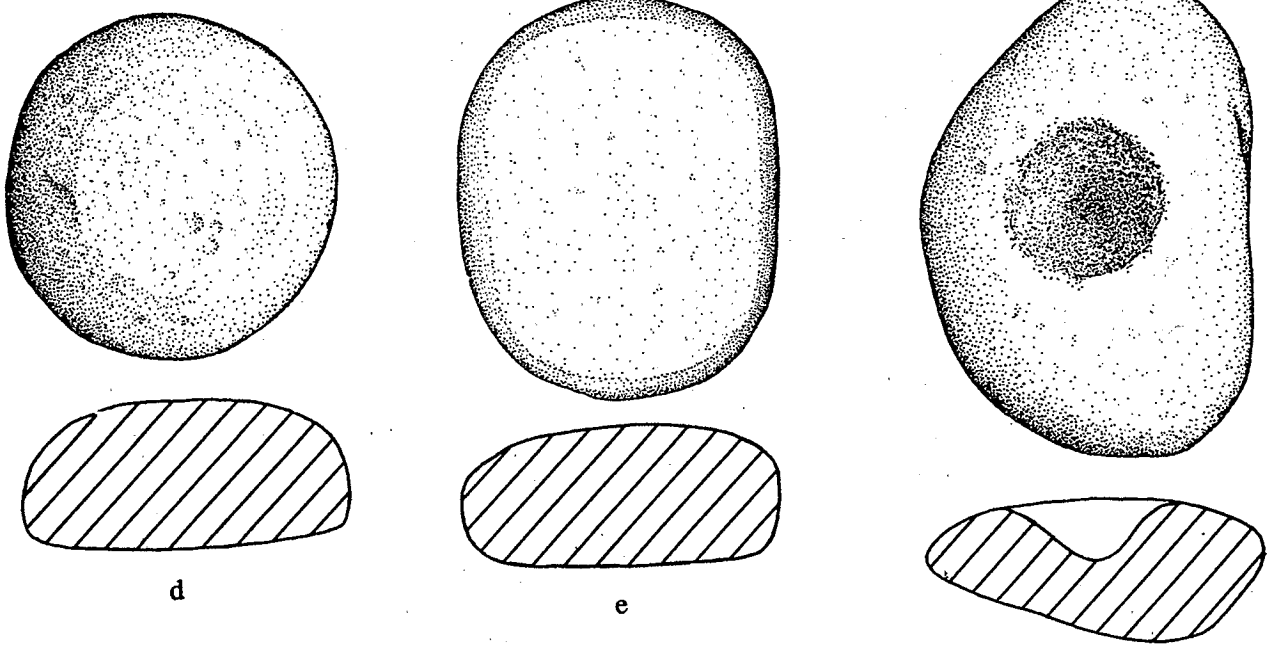
Scale .5:1



a

b

c

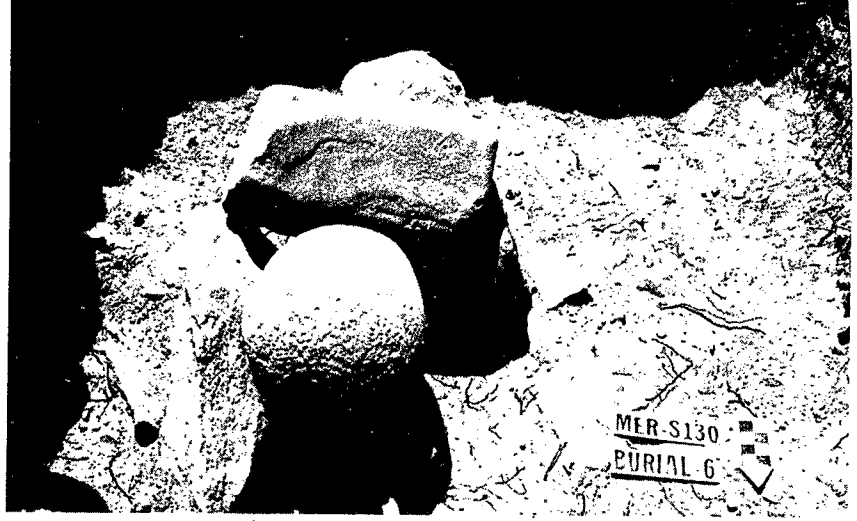


d

e

f

a



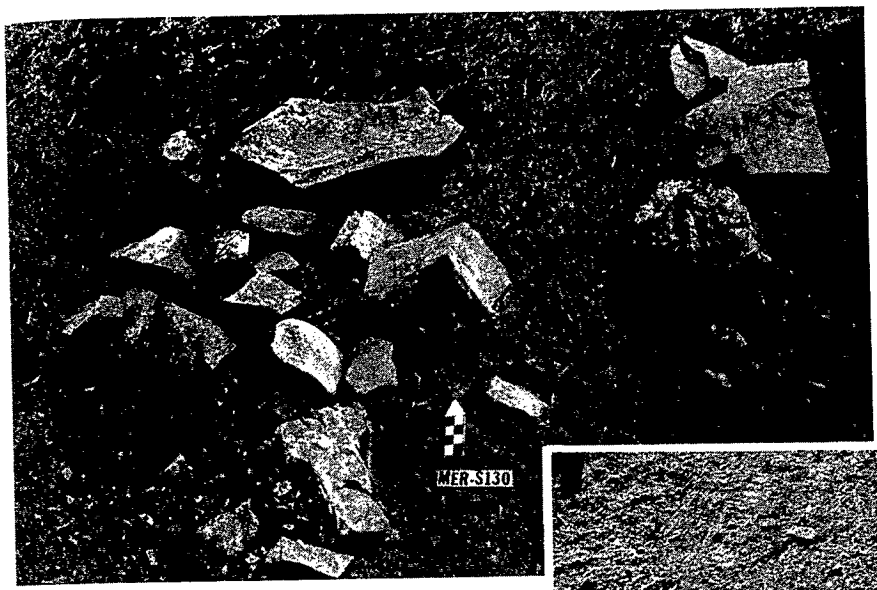
b

c

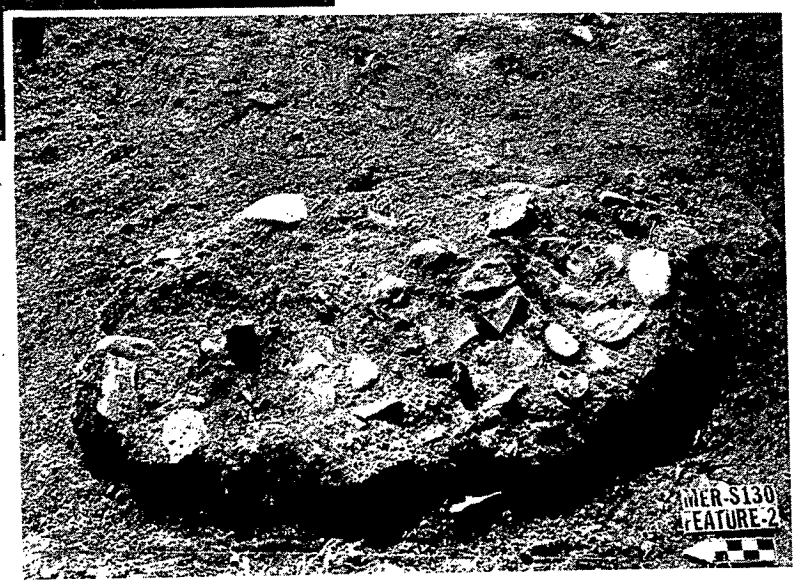
d

e

FIGURE 21

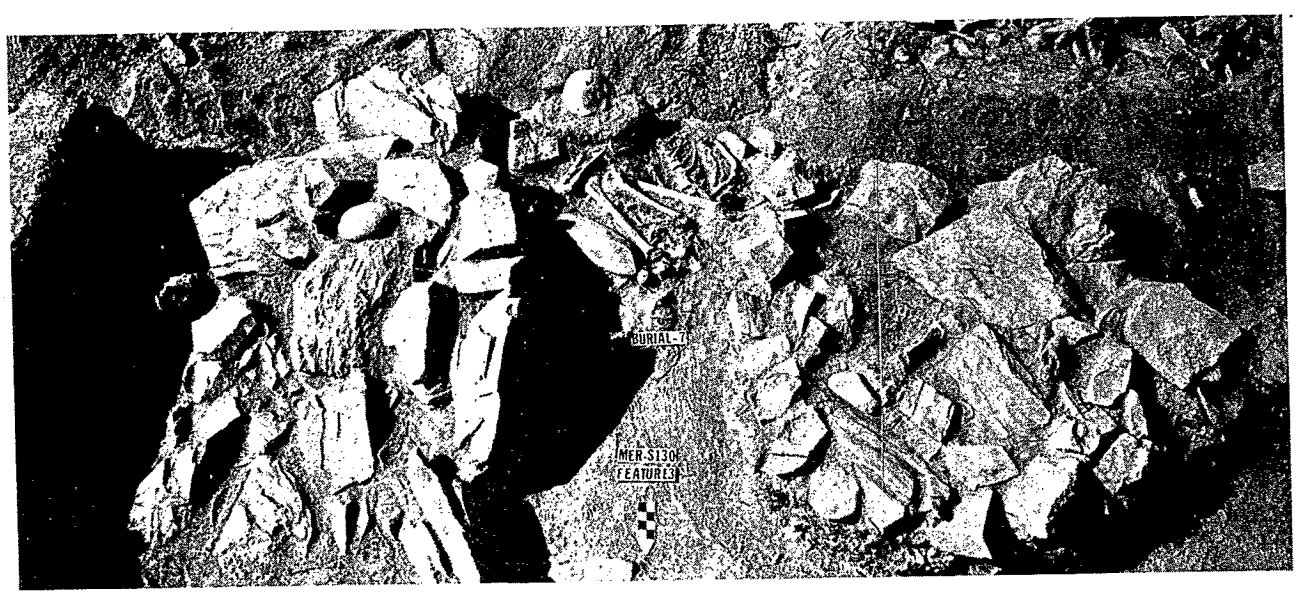


a



b

Figure 22. Features at Mer-130: a) Feature 4, cairn;
b) Feature 2, cairn;
c) Feature 3, rock pavement, and Burial 7.



c

FIGURE 22

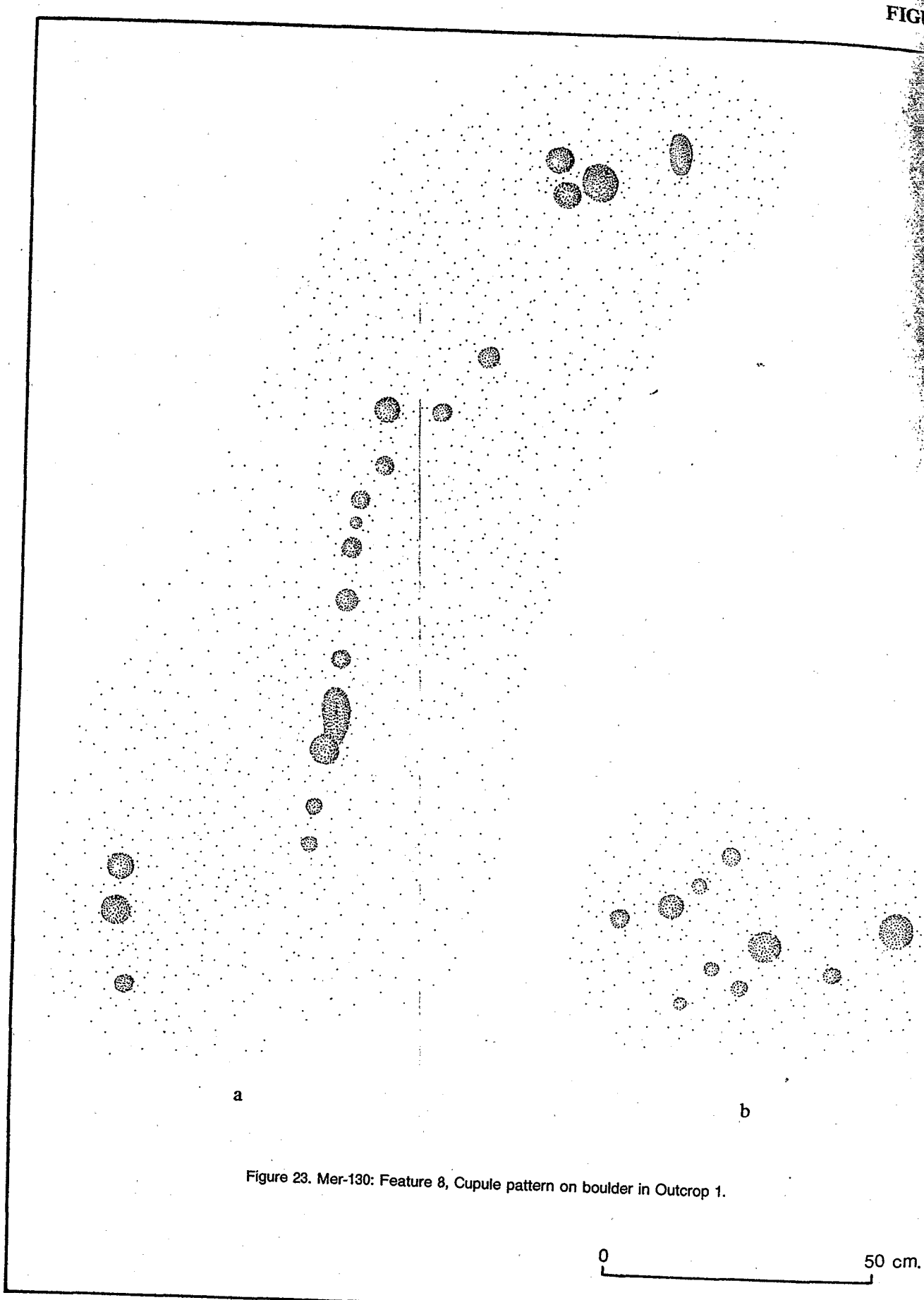


Figure 23. Mer-130: Feature 8, Cupule pattern on boulder in Outcrop 1.

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